AMIGA
FORMAT

New to the Amiga?
Start here!
Beginners special issue

EAT ME!

create an arcade ga...
Where do I start in progra...
...hat do I need to make a game work...
...make games? Who can tell me how 3-D...
...y do I have to learn programming to make...
...I have to create adventure or arcade game...
...rogram? When can I start making games myself?...
...Which is the best software for a beginner? What's so...
...ogram? Where did the ... who programmed Lemm...
What's so clev... ...n 3-D in Cybercon 3?...
...asier to program? ...Which program did...
How ...n game look as goo...
Are adv... ...asier to program...
...here do I start in...
...ogram did they u...
...you make a game...
...o I create an arcade...
...is the best software fo...
Where do I start in...
Are adventure games er...
Where did the pro...

...game...
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...o I create a...
Who can tell me...
What's so clever about...
Are adventure gam...
Which program did t...
Why do I have to l...
How do I creat...
Who ca...
What's so...

SECRETS REVEALED!
The experts show you how great games are made...

DO IT YOURSELF 11-page guide starts you going!

COVER DISK
31
AMIGA FORMAT

Knightmare

AS SEEN ON TV! Make the journey into a fantasy world in Tony Crowther's follow-up to the amazing Captive, Mindscape's epic new adventure based on the TV series!

BY POPULAR DEMAND...
Usefulness abounds!

SYSINFO: find out what's inside your Amiga!
VIRUSCHECKER: don't be caught by the nasties!
PICSAVER: grab any screen as an IFF picture!

AND MANY MORE USEFUL UTILITIES!

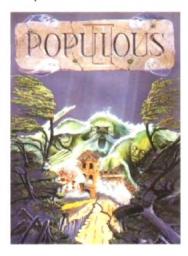**NO COVERDISK?**
THEN ASK FOR IT FROM YOUR NEWSAGENT

THE GODS ARE BACK AND ALL
HELL IS ABOUT TO BREAK LOOSE

Populous II has arrived and it's everything you'd dreamt it might be - and more.

More earthquakes, more volcanoes, more tidal waves,

Available late December for Amiga and ST.

£29.99

more deadly swamps, in fact the most devasting natural disasters known to man, and a few he hasn't heard of yet.

This time you find yourself back in Ancient Greece, where as one of the sons of Zeus himself, your aim is to achieve immortality and take your place next to him on Mount Olympus.
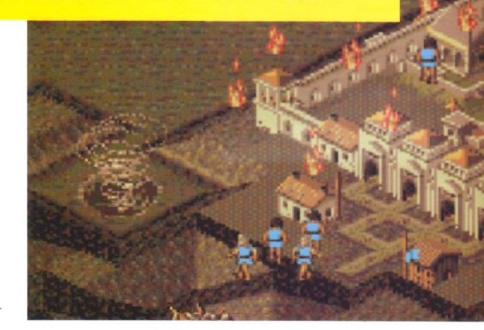
But the old boy isn't going to let you have your way without an almighty fight and he's conscripted 32 of his most powerful deities to stand in the way of your ambitions.

Design your own elaborate settlements with grand houses, roads and trees. Construct city walls in preparation against the oncoming rains of fire, whirlwinds, bolts of lightning and new, especially devious monsters like the foxy Helen of Troy, who leads people to their death with her beauty.

Populous II has 1000 worlds to conquer, 1MB of graphics, 5,000 animations, dozens of new sound effects and a mind-blowing sound track.

To celebrate it's release, you can also collect special Populous II T-shirts, mugs, data disks and interactive clue books from The World of Populous II which you will find in participating retailers.

Contents

Screenplay

The monthly games review section that's better than a games-only mag, packed with top reviews...

Reviews

Every month, we bring you the best reviews of the latest releases in hardware and 'serious' software

Regulars

In NEWS
Once again it's the Amiga itself that's making the headlines, with the three millionth Amiga just been sold. But do you know how many of those live in the UK?

Reviewed: Another World
Can graphic adventure specialists cut it in the arcade arena? *Another World* is a land of stunning views and hostile wildlife. Can the game survive?

In GAMEBUSTERS:
Mega-lo-mania is an enormous and challenging game: but if you're beginning to get stuck, consult our fabulous player's guide.
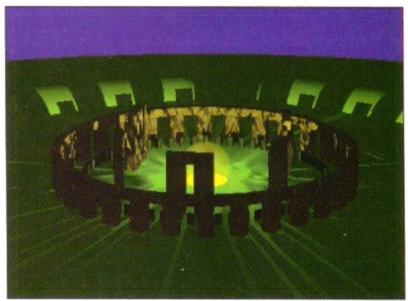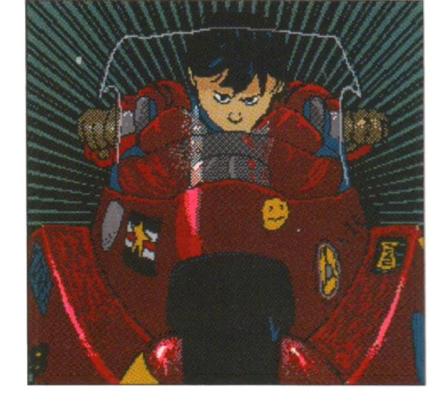

Reviewed: DCTV
If you own an Amiga 500 or you don't have £1,000 to spend, but you'd still like to get into True Colour graphics, this could be just what you need.

Reviewed: Real 3D version 1.4
With its unique solid modelling and its extreme speed, *Real 3D* always had a lot going for it: but can it now make other ray-tracers redundant?

In PD UPDATE
Check out the latest in exciting graphics and music in the PD demos section, as well as games and heaps of useful stuff...

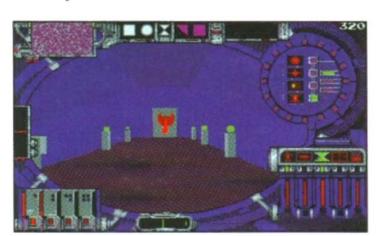# Your guide to making games

A word to the wise!

Last month, on our bumper Christmas Special, we gave away a complete graphics package called The Graphics Workshop and a complete music program called Sequencer One, combined value almost £180. It's not too late for you to get a copy: simply spend £5 to order a back issue from us! See Page 184 for details
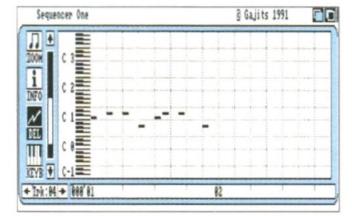
The man who invented *Lemmings*, Dave Jones, wrote his first best-selling game in his spare time working on just the Amiga. Find out how you can do it too in our special game-making guide.

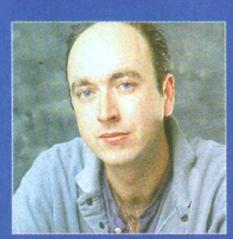*Populous II* was programmed on an Amiga, and the chaps who did it can teach you how to do it too!

You can also find out how 3D games work: and adventures, arcade games…

Write a tune using the *Sequencer One* package we gave you on the Coverdisk of Issue 30 and the samples we've given you on this issue: and you could win some pretty amazing music gear!

Welcome to Amiga Format!

Hello and welcome to Amiga Format, the world's best-selling magazine for Amiga owners! Every month we deliver the most complete picture of the Amiga scene, so whether you're new to the computer or an old hand, there's plenty in here that you'll find useful and enjoyable.

Every month, there's news and reviews of everything on the games scene and in the world of hardware and what we call 'serious' software (useful stuff like word processors, creative stuff like graphics and music programs and useful utilities). Then there's PD Update, which picks out the best in free software, and special sections of the magazine set aside to helping you with your problems: Gamebusters for game cheats and hints, Workbench for any other Amiga hassles!
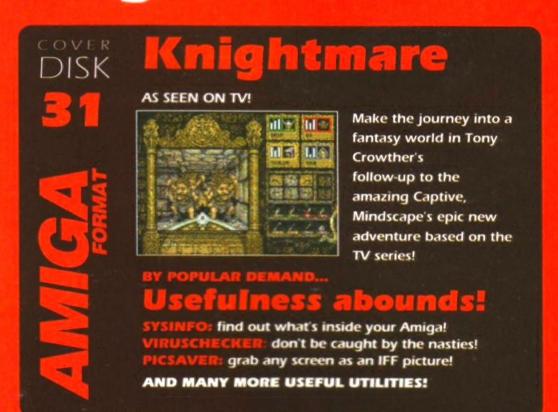
L

BUT THERE"S MORE!
This month, because we know there's a lot of people out there who've just got a new Amiga, we're being extra generous to beginners. Throughout this issue, you'll come across the 'L' symbol which points out special information for anyone who's new to the Amiga.

So by the time you've flicked through the pages of the mag you should have picked up an awful lot of information that you might not have known already. Like how to protect your games from viruses, how 3D graphics programs work and why you get a Workbench disk with your Amiga.

And because Amiga owners are creatures of superior intelligence, we know you'll be doing more than playing games with your Amiga. The key to using serious software is Workbench, so a new series starts this month that will tell you how to get to grips with Workbench. Read, learn and enjoy!

COVERDISK
turn the page!

Knightmare

Knightmare
COVER DISK 31 AMIGA FORMAT
AS SEEN ON TV!
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BY POPULAR DEMAND…
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AND MANY MORE USEFUL UTILITIES!

Get stuck right in to this excellent playable demo of one of the year's top adventure prospects! Not just Mindscape's game of the TV series, but a superb role-playing adventure in its own right. Tony Crowther uses the same game system employed in the smash-hit space exploration epic Captive to bring you a whole new world of challenging exploits!

Viruschecker

Virus Checker Requester
DANGER
The disk in DF0: has NON-STANDARD BOOT CODE
Remove   Display   Ignore   Learn

Don't get caught by the nasties! Protect yourself from virus invasion with this excellent, up-to-date virus checker. It can run from your Workbench, so that every time you put a new disk in, it gets checked.

Sysinfo

With all this talk of upgrading your Agnus, you need to know what's inside your Amiga. Find out the easy way!

Picsaver

Save Screen as…
Size: 640 × 256 × 2
File
Save   Cancel

There's all sorts of stupid reasons why you might want to grab a program screen and save it out as an IFF picture (mind you, there probably aren't any good reasons). Still, you can do just that with this.

Doody

Now that's what I call a highly enjoyable little game! All you have to do is bash the turtles, but getting it done's quite a challenge…

GETTING STARTED

It's easy, honest. Just turn your Amiga on, pop the Coverdisk in, and after a few moments the Console menu will appear (Console was originally on *Amiga Format* Coverdisk 28, but it's so good that I just had to use it again).

Just click on one of the options with the left mouse button. The rest is automatic. Go on, give it a go now! One thing that you may find (depending on how much memory you've got) is that after a few options some of them don't work.

This is due to your computer's memory getting clogged up along the way. Just reset the machine by pressing Ctrl and the two keys either side of the space bar, and the Console menu will load again.

Unless you don't have a mouse, you can use the Console program to get at all the treasures on the Coverdisk. Just point and click with the left mouse button.

PIC SAVER
PREBEN NIELSEN
PAL / NTSC

This program solves one of the problems that a lot of people run into – how do you save out screens from within programs? Although not quite as good as a Datel Action Replay II cartridge, *Pic Saver* is simply ideal for getting screens from everyday, Workbench friendly programs.

To run the program, just select the option from the Console menu. A small window will then come up, informing you that the program has been installed. Running *Pic Saver* again will remove it from memory.

Using the program is nearly as simple. First, press the keys at the lower left side of the keyboard (Alt, Shift and Ctrl). You will find a set of cross hairs will appear on the screen, and they will remain so long as you keep those keys pressed.

Pic Saver offers you three different ways to select graphics to save. If you press the S key (while the three keys described above are pressed) then the whole screen will be saved. Pressing W (again simultaneously with the three keys) will save just the currently selected window.
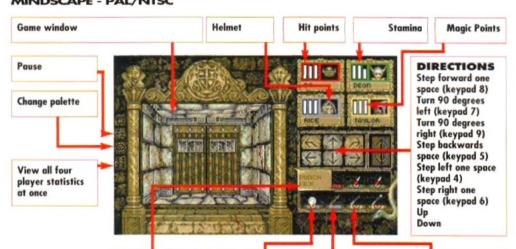
Alternatively, by moving the cross hairs with the mouse and clicking the left mouse button for the two corners, a rectangle can be cut out of the screen and saved on its own.

Once you have selected an area to save, *Pic Saver* will put up a requester box for you to type in a file name, to save the graphics as an IFF picture for loading into paint programs like *Deluxe Paint*. Within this box it puts up the dimensions of the area you're saving, plus the number of bit planes (a one bitplane picture has two colours, two bit planes give four colours, three give you eight colours and so on).

Coverdisk

Stop, look, and listen. These are the pages to guide you through an absolute dream of games and utilities on this month's floppy...

KNIGHTMARE
MINDSCAPE - PAL/NTSC

Game window | Helmet | Hit points | Stamina | Magic Points
Pause
Change palette
View all four player statistics at once

DIRECTIONS
Step forward one space (keypad 8)
Turn 90 degrees left (keypad 7)
Turn 90 degrees right (keypad 9)
Step backwards space (keypad 5)
Step left one space (keypad 4)
Step right one space (keypad 6)
Up
Down

Actions' menu | Character's left hand | Character's right hand | Preset action flag

KNIGHTMARE IS A dungeon game and the aim is to explore the caverns, kill the monsters and collect the treasure. You have find secret switches and the keys to unlock doors all while you are mapping the area. Your team has four adventurers, one of whom wears a helmet which provides the eyesight for the group.

The status of this gang of four is shown in the top right of the game display. Three of them have faces and one wears the 'seeing' helmet. Their health, stamina and magic points are shown by the bar graphs to the left of each piccy. If any member of the team is hit then the damage they've taken is flashed in red over their name and the total taken from their hit points. If this gauge reaches zero, that character is dead and all their possessions will appear in front of you as will their heart – which can be used in the full game to bring them back to life.

Knightmare is mouse controlled with the left button initiating get/move commands and right action commands. Clicking on the cluster of arrows moves the party in the direction of the arrow. Once you're walking about you will come across objects lying on the floor, buttons in the wall etc. To get or use these click on them in the game window with the left mouse button. If it's an object the cursor will become that object to signify you've picked it up, if it's a button then it will have been pressed.

When you've picked something up you can either put it into the hands (the colour coded rows of cushions below the portraits) or the backpacks. To put something in a hand, click it down on the cushion with the left mouse button. To access the backpack, click on the game window with the right mouse button and it will change to reveal an inventory. Just click the item down

VIRUS CHECKER V5.26
JOHN VELDTHUIS - PAL / NTSC

Computer viruses are an ever spreading menace, corrupting disks all over the world. If you've got a disk or two that behaves strangely, why not run this program over it just to make sure? This is one of the latest releases around, and it can cope with most of the more common viruses that are currently in circulation.

There are two different ways to use *Virus Checker*, for looking for two different types of virus. By running it from the Console menu, the program will install itself into memory – you'll see a small title window appear at the top of the screen. All floppy disks will be checked for boot block viruses as they are put into disk drives.

When Virus Checker finds something suspicious, it will ask you what to do next. Do not select 'Remove' unless the program positively identifies a virus. If it says that the boot block is suspicious, choose 'Display'.

Then you can see if there is an encoded message (which usually says, "Don't kill me, I'm not a virus"). Never wipe the boot block from a games disk – that will probably kill the game forever.

To look for the other (file) type of virus the program takes a bit longer, and has to be told to actively look for the them. This is easy to do – click on the title bar, first with the left mouse button, then with the right.

The program then prompts you to enter which drive to check. Just take out the Coverdisk, put in the disk you want to check and click on continue. *Virus Checker* prints a list of all the files it's checking, and whether or not they are a virus.

Finally, have a real good look at the documentation, which has a lot of information about different types of virus at the end of it (most is just a check list of all the updates of the program since it was first released)

in the required slot with the left mouse button and once more with the right to exit the inventory. Each character has a backpack and to switch between them, use the colour coded icons in the top right on the inventory.

Fighting is a useful art to master, particularly as there are a number of large beasties hunting you down. Characters can either fight empty handed or with a weapon they hold.

To attack click with the right button over the hand you want to hit with. This brings up a menu of the possible options for that weapon/hand (punch, kick, stab, slash, hack etc), just move the cursor over the option you want and click with the right button again. You'll here a whoosh as the hand goes through the air and an impact if it hits. This is a slow technique and confusing when the going gets tough, but you can pre-set the hands to repeatedly do your bidding. Once again call up the menu with the right mouse button, then select the option you want with the left. The scroll menu will clear and the cushion should bear a small red-and-white triangle, showing it has been 'primed'. When the action starts click on the cushion with the right button, and the chosen action happens. It will be cross hatched for a second or two while the character recovers from the blow, but once it clears you can strike out again.

HINTS:

● Check every square of corridor thoroughly for secret buttons.

● Always preset you actions, you never know when the next fight will take place.

● Try the magic wands with different characters, as magical skill varies.

● Remember that all your characters are either left or right handed, so take care which hands have the best weapons.

Forget Elm Street these dudes on Coverdisk 31 will keep you stocked up on nightmares for absolutely weeks.

```
FileNameDump
DF0:Console
DF0:menu1
DF0:devs/system-configuration
DF0:s/startup-sequence
DF0:sea-monster-pic.
DF0:PicSaver/PicSaver.asm.info
DF0:PicSaver/.info
DF0:PicSaver/PicSaver.Doc.info
DF0:PicSaver/ReadMe.fnf
DF0:PicSaver/PicSaver.asm
DF0:PicSaver/PicSaver
DF0:PicSaver/PicSaver.info
DF0:PicSaver/PicSaver.Doc
DF0:Picsaver.info
DF0:sea-monster-pic..info
DF0:Console.Doc.info
DF0:libs/arp.library
DF0:libs/icon.library
DF0:libs/nathieeedoubbas.library
DF0:Sysinfo.info
DF0:Console.Doc
DF0:Disk.info
```
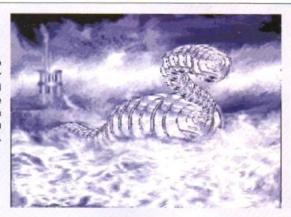
Looking at the contents of a disk for file viruses, *Virus Checker* prints out a list of what it has found so far. This is a dead handy way to find out what's on a disk without using the Shell.

PIC OF THE MONTH
JOHN RYAN - PAL ONLY

An excellent example of just what you can do with 16 colours and resolution, Sea Monster was painstakingly blended, smoothed and smeared with *Deluxe Paint III* at a college which the artist attends (he doesn't even own an Amiga and he can do this). Can you do better? We use only the best entries. Send yours to:

Pic of the Month, *Amiga Format*, Future Publishing, 30 Monmouth Street, Bath BA1 2BW

DOODY
ANDY CLARK – PAL ONLY

In Doody all you have to do is move about, hitting the turtles, spiders and crabs from below to knock them off their pegs. Then run over them! It's simple but very tricky to do well.

First, a word of warning. *Doody* just doesn't work on some Amigas. It isn't caused by different chips or memory expansions – even on a pair of identical machines, sometimes it works, sometimes not (turning off auto fire if you have it seems to help).

Assuming that you can get the program working on your Amiga (it does work on the majority) you'll soon discover it's a cute, fast and fun game. *Doody* is an orange on legs who has fallen down a sewer. The idea is to go through 32 levels of increasingly difficult bad guys who just love icing Doodys.

To play the game you will need a joystick plugged into port two (not the mouse port). Press fire to get to the game after you've loaded it through the Console Menu as per the Getting Started box on the facing page.

The controls are simple in concept but difficult to master. Press left or right to move in the relevant direction, and press fire to jump. Note that it takes a while for Doody to start and stop moving, but once at speed it's the fastest thing on the screen.

To kill the nasties (necessary to complete each level) you have to first knock them off their feet, and then run over them. To do this you hit the platform they're standing on from below. Beware, if you knock them while they're already down it will bounce them back up again! The POW button can be hit for a smart bomb effect – it knocks all the bad guys down.

Collect the Bonus letters and tokens for more points (an extra life is awarded every 10,000). Have fun, and try playing with a friend if you have two joysticks: hit F2 from the title screen or high-score tables. After you've finished playing, you will have to turn your computer off – a clever but annoying little quirk.

SYSINFO V1.98
NIC WILSON SOFTWARE - PAL / NTSC

Here is one of those utilities that you use only once or twice. It gives you a speed rating of your Amiga, and displays some interesting information about the internal chips fitted.

This is handy information to know if you are thinking about upgrading to Workbench 2 and you want Enhanced Chip Set, because many A500s and A1500/A2000s already have an ECS capable Agnus chip, but some don't. Find out if you're one of the lucky ones.

To run *Sysinfo*, just click on the option from the Console menu with the left mouse button. The program will take a few seconds to do some test procedures, and then puts the results up on an attractive diagnostic screen.

Please don't be too upset if *Sysinfo* makes rude comments about the speed of your machine. Remember that most of the comparisons are made against machines with faster processors or accelerator cards. The program does praise such devices if it encounters one.

Using Your **Coverdisk**

1. Always write-protect your disk. Move the tab so a hole is showing.

2. Copy the Coverdisk and use the copy, not the original. This may sound like a complicated task suitable only for techno buffs, but it's surprisingly simple to do, just follow the simple instructions for copying the disk which are given below.

3. Read the instructions when using the programs.

Backing up your Disk

There are two ways of making a copy of your disks, and this is the easy one. Don't be daunted by the fact that you need to use the Shell or CLI: it's actually a lot easier than you might think.
Just follow these simple steps...

1 Load your Workbench disk. Open the disk, find the icon that says Shell or CLI and double-click on it.

2 When the Shell window appears and the drive light is out, type in:
Diskcopy from DF0: to DF0:
and press the Return key.

3. The Amiga will now ask you to insert the 'source' disk. It means the disk you want to copy, so put the Coverdisk in the drive and press the Return key.

4. Wait for a while and it will read all the information off the Coverdisk, telling you how far it has got. Then it will ask you to insert the "Destination" disk. Put the disk you want to copy your Coverdisk onto in the drive and press the Return key. Note that the disk does not need to be formatted already.

5. Put the source disk and destination disk in a couple more times when the Amiga asks for them. When it says "Diskcopy Finished" just type in:
endcli
to get out of the Shell or CLI. You may have to put the Workbench disk in again. Now your copy is ready!

DISK PROBLEMS?

If you have a problem with the disk – and you're sure the disk is in full working order – then you may need a little help. If you ring us on any Tuesday, and ask to speak to Pat McDonald, he will do his best to help you. Please understand, giving this sort of advice is time-consuming and we are very busy people, so only call if you really have to and do be considerate if we can't talk to you just then. If the problem is particularly complex it is better to send it to us in written detail. It will then be dealt with in the Workbench pages of the magazine.

BE CAREFUL!

We have done our best to check that the programs on the Amiga Format Coverdisk are simple to use and have no known viruses. We cannot usually answer complex telephone queries on the software (see the Disk Problems? box) and we do not accept liability for any consequences of using the numerous programs that are on the disk.

COPYRIGHT

Unless it is specifically stated, the programs on the Coverdisk are not in the public domain and the copyright remains with the author of the program.

Because some of the programs on the coverdisk are not PD, selling or distributing them without the author's specific permission is against the laws of copyright.

Disk not working?

We duplicate over 160,000 disks every month. Out of all those, obviously a few will be faulty. If the disk or any of the programs will not load or run properly, there may be a problem. Don't panic!
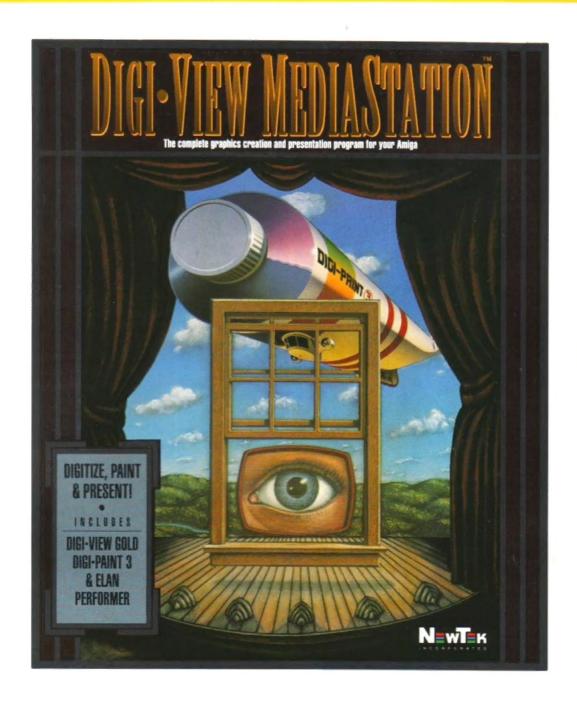
First try using the *DiskDoctor* utility on your Workbench disk to rescue it before sending it off for a replacement. In-full details of *DiskDoctor* can be found in the user's manual that came with your machine.

However, if your Coverdisk is faulty, you should send it back INCLUDING AN SAE for a free replacement within a month of the cover date to:

Amiga Format February Disk
Disk Copy Labs
Unit A, Westmarch
London Road
Daventry
Northants
NN11 4SA

Remember to include that stamped, addressed envelope!

THE MARK

CRUISE FOR A CORPSE

OF A WINNER

That's entertainment!

Accolade are heavily into movie licences, with both *Home Alone* and *The Taking of Beverley Hills* coming to the little screen. Whether Amiga owners will be able to play eight-year-old domestic guerrilla Kevin is not confirmed - the game's only out on PC at the moment - but we'll keep you posted.

Interesting...

Philips have announced that their Taiwan plant has turned out the company's 10 millionth computer monitor, after eight years of producing them.

Buck's back!

Comic-book hero Buck Rogers returns in another epic adventure from SSI very soon. Matrix Cubed is the sci-fi role-playing follow-up to the original Buck game *Countdown to Doomsday*, and is expected from US Gold for 1Mb Amiga owners next month.

3 millionth Amiga is sold

The recent release of the Amiga 500 Plus looks set to add further to sales of a million Amigas in the UK and over three million worldwide.

There are now more than three million people using Amigas worldwide, with the UK user base fast approaching the one million mark. The three millionth machine was sold during November 1991, but it's the continuing acceleration in Amiga sales which is causing a real celebration in the Amiga community.

From its release in September 1985, the Amiga took three-and-a-half years to reach the magic one million. Just a year-and-a-half later that figure was doubled, and the last million have sold in only a year.

Britain is beginning to establish its place as the largest Amiga-owning nation in the world, with the number of Amigas in the UK rising rapidly from around half-a-million before Christmas last year, and Commodore UK confidently predicting that there will be over a million Amiga owners in the UK inside the next month or two.

In America the Amiga is seen primarily as a creative tool for video, multimedia and graphics work and in Germany, which has around 700,000 Amiga owners, it's also taken very seriously. The vibrancy of the UK Amiga market is probably accounted for by the fact that it's seen primarily as a games machine over here,with Amiga 500s making up a much higher proportion of the machines sold.

Pre-Christmas computer buying guides in *Which?* magazine and *The Guardian* both stereotyped the Amiga as a game-playing machine. This is typical of a view which potentially holds dangers for the Amiga: it's a commonly-held opinion in the UK software industry that the Amiga is very vulnerable to competition from the games consoles. Here at *Amiga Format*, we believe that the continued success of this magazine – which is still the best-selling Amiga magazine in the world, and more than twice as popular as any of the games-only Amiga magazines – shows just how wrong this stereotyping of the Amiga as a games machine is.

Home projects now possible

Here's an idea for you! For some time now, we've been aware that there's no way you can use your Amiga to control electrical gadgetry. Until now that is! Switchsoft have announced a couple of new whizzy gadgets that home electronics fans will find both fascinating and useful.

The first is an Input/Output port, which costs only £26.95 and allows you to connect electric motors, light bulbs or whatever else you want up to your Amiga and control them from BASIC programs. It could, for example, be used as a basis for an Amiga-driven robot or a home control system.

The second is the Sensor and Control Experiment kit, which costs £24.95. As the name might suggest, this is designed to help with electronics experiments and projects. It includes a relay-controlled motor, a reed switch, a light bulb, a tilt sensor and four LED lights. It seems ideal for combining an interest in electronics and the computer.

Switchsoft 0325 482454

GVP reveal expansions within expansions

The GVP Impact II hard drive, soon to become not merely the best way of adding memory and disk space, but also the key to a whole range of other expansions for the Amiga 500.

A GVP hard drive is fast becoming more than just a memory-booster. GVP, the American firm that leads the world in Amiga hardware sales, announced their processor accelerator for the A500 Impact Series II hard drive exclusively at the World of Commodore Show in November. Now they've revealed details of their PC Emulator for the hard drive, adapted from the Vortex ATOnce card.

The key detail behind both the 68040 accelerator and the new GVP/PC286 emulator is that they actually install inside the new version of the Impact hard drive, attaching to what GVP have termed the 'mini slot' in the drive. This new approach to expansions makes limitless expansion of the A500 a real possibility, while avoiding the problems of invalidating your warranty that tend to be a concern with A500 internal expansions.

Already the GVP hard drive, consistently identified as the best for the A500 in *Amiga Format's* independent reviews, is a good way of adding the two vital ingredients for serious A500 owners, allowing you to include up to 8Mb of RAM as well as the hard disk storage. Now it seems it will cater for all your other needs too. GVP are keenly aware not only of the size of the UK Amiga user base (see lead story) but also of the dominance of the Amiga 500 in the UK, and seem to be responding well to catering for UK Amiga users. The only snag is that the release date of the redesigned hard drive and the two mini-slot expansions has yet to be determined.

GVP's UK distributor is Silica 081-309 1111

Italian stardom for Amiga animators

What can you do that Eric Schwartz hasn't done already? Win a prize for your Amiga animation at an Italian computer graphics festival...

Amiga animators can taste a bit of international stardom by entering their latest and greatest works in a major international contest.

BitMovie'92 is to take place for the fifth time, in the town of Riccione, Italy from 17-20 April 1992. The highlight of the computer animation festival is a competition, with two sets of prizes for the animations on show: one set awarded by a panel of judges, the other by votes from the visitors to the exhibition. The competition attracts entrants from all over the world and one of last year's winners, perhaps unsurprisingly, was Eric Schwartz.

You can enter by writing for an application form to Circolo Ratataplan, c/o Carlo Mainardi, Via Bologna n. 13, 47036 Riccione, Italy. The only major restriction is that all entries will be run in real time from computer disk, not on video. There are competitions for both 2D and 3D animations, as well as a single static image prize. And by the way you'll have to get your entries to the organisers by March 15.

AMOS gets Easy

Games programming system AMOS is to appear in a new version aimed at complete beginners. If you know nothing about programming, this could be your best bet to get into creating games.

The original AMOS had a reputation as being a beginner's programming system, which really it isn't. It's actually a complete language, which inevitably means you need to spend considerable time and trouble before you can get good results.

Now, however, there's Easy AMOS. This new version assumes that you know absolutely nothing about programming when you start, and leads you step by step through the learning process. Publishers Europress have made this possible with a character called Professor Amos, who leads the lessons, and a carefully-written manual. Europress's Paul Shrimpling claims that Easy AMOS is so simple that even his grandmother has been able to get to grips with it. It's probably not the ideal birthday present for grannie, but you'll be able to buy it yourself from next month for £34.99.

Europress Software 0625 859333

Amiga Format in on another show!

Following the hugely successful World of Commodore show, which was presented by Amiga Format, we're going to get involved in another one. This time around, though, it's going to be a slightly different affair.

The new Show, currently pencilled in for the end of April at Wembley, London, will be arranged by Amiga Shopper, 'the magazine that's serious about your Amiga'. Amiga Shopper is also the magazine that helps you decide what to buy, so their show will be concentrating hard on bringing you bargains galore from all the top names in Amiga distribution and sales.

Although bargain-hunting and Amiga-related buying will form the main focus of the Amiga Shopper Show, it's also likely to reflect the other face of the magazine: advice. The magazine team that answers heaps of questions every month should be on hand to give their opinions and lend a helping hand with your Amiga problems. And with any luck, Amiga Format will be allowed to go along as well, so see you there!

Games developers have their say

The Society of Software Authors annual conference is the place where the top games programmers meet to discuss the state of their art. We went along to see what they're worrying about...

It's not often you see more than half the country's top games programmers gathered together in one room. But it happens once a year as the Society of Software Authors, a loose gathering of well-intentioned developers, collects for the conference. The day is organised around guest speakers, who have their say and then answer questions or lead a group discussion with the audience.

One of the main concerns of developers seems to be losing their image as amateurs working during the night in back-bedrooms and sleeping during the day. Andy Craven of Vektor Grafix proposed the idea that developers must become increasingly professional, working to normal office hours and being careful to hit deadlines.

He believes that the emphasis is moving towards new games being commissioned by the software houses from developers with a proven track record. The benefits for game buyers are that games will go on sale on time and quality can be guaranteed.

The view from the other side of the fence is pretty much the same, with MicroProse, representing the publishers, saying pretty similar things. They also had some interesting opinions about the future of games, however, with research telling them that PCs and consoles are the growing areas of software sales. Maybe so, but the Amiga's share doesn't need to grow: it already sells more games than any other format.

With an increasing number of Britain's developers now working on mluti-format systems and developing for consoles, it's one view of the future that's of great concern to them. As ever, the conference spent a fair amount of time discussing the possi-

Andy Craven, of highly professional developers Vektor Grafix, argues that programmers must get used to working in a more professional way.

ble future of gaming, with virtual reality much talked-about and, later, a presentation by Sandy Mackenzie of the Philips CDI system, with a clear push to get Britain's programming talent interested in developing for the new CD system. Possibly the cost of a development system, and the fact that CDI productions tend to be 'created' rather than programmed, will mean it's unlikely to suit the traditional 68000 coder.

The day closed with the 'A Question of Software' quiz, in which Damien Noonan and Neil Jackson (from our sister magazine ST Format) represented the magazines against teams from the developers and the publishers. Despite the fact that we had questions ranging from Nintendo cheat systems to Boolean algebra, the magazine teams managed to carry the day, narrowly beating the audience on points!

The SSA conference is a highly enjoyable, very well organised and very well presented event. The SSA exists to dserve the cause of the developers, which can only be A Good Thing. Any developer who is interested in joining the Society should contact Nalin Sharma on 081 503 2521. One last thought. What do you call a gathering of programmers? Well, it has to be an assembly, doesn't it?

Ian Oliver of Realtime Software (left) and Ian Andrew (middle) of Incentive discuss the relative merits of virtual reality, while Steve Cooke (right) argues with the aid of a friend that computer games should now be spawning film and book licences.

LUCASFILM TALKS!

Lucasfilm games have announced, at a British press conference, their plans for 1992 and beyond. Trenton Webb reports with not only a preview of *Monkey Island 2* but also hears of the US games giants big plans for the future of computer games. A future that focuses sharply on the Amiga and its CD potential.

Guybrush returns in 1992, in the all-singing, all-dancing, all-spitting *Secret of Monkey Island 2*, while Bobbin the Weaver finds his voice in the CDTV *Loom* 'talkie'.

Indiana Jones and the Fate of Atlantis is coming. It's based on an original script by Hal Barwood (he wrote the scripts to *Sugarland Express* and *Close Encounters of the Third Kind*) the game is not restricted by a movie. This allows the introduction of three totally different routes by which the game can be finished.

LUCASFILM ARE ON a roll. Last year's awesomely good *Monkey Island* should have been a tough act to follow, but with *Indiana Jones IV*, *Monkey Island 2* and iMUSE in the bag it should be simple. And if their carefully considered vision of a CD-based gaming future comes to pass then, as Doug Glen, head of Lucasfilm Games puts it, "in 1998 these will look like old Buster Keaton movies: quaint!"

1992 will be a prolific year for the US publisher as they release two major new games on the Amiga and rework older titles for the CDTV. They also have a new sound system called iMUSE in the offing, which should make computer gaming a far richer experience.

Indiana Jones IV – The Fate of Atlantis and *The Secret of Monkey Island 2* are the new titles and both look set to push graphic adventures further than ever before. For the first time Indy goes solo without a movie to support him. He will, however, have the talents of top Hollywood script writers to make sure the game has that authentic feel. Once again 'hat man' is taking on the might of the Third Reich, this time in a race to keep the Atlanteans' secret power source from the hands of the Nazis.

Monkey Island 2 looks better than the original, with a wilder strain of humour and a more outrageous plot. It's the brainchild of Ron Gilbert, who wrote *Monkey 1*, it involves all the best characters from the first game in a bigger, better and brighter tale. The game will also be the first Amiga production to feature iMUSE.

iMUSE is Lucasfilm's interactive music system which is currently having its public debut at the US Consumer Electronic Show. Doug Glen explains that, "it allows a composer to write music for 100 per cent of the game. iMUSE intelligently scores the music and sound effects so that they're in sync with your characters' actions. The pitch and pace of the game's current situation will be reflected in the music. It really adds atmosphere". And the system isn't just for PCs with £300 soundcards, but will be ported over to the Amiga with tweaks where necessary.

It is Lucasfilm's plans for the future, though, that

Doug Glen, head of Lucasfilm Games believes 1992 is the first year of the CD, with the launch of the *Loom* 'Talkie'.

should warm Amiga and CDTV owner's hearts as Doug Glen confirms: "We believe 1992 will be the first year of true CD games. There are at least 14 different standards of CD ROM currently available or in development. CD ROM drives though, can be divided into three different types: CDs requiring a video game console; CDs requiring a personal computer; and CDs designed to operate with a dedicated unit, most notably Commodore's CDTV and Philips' CD-I. We are currently getting ready *Indiana Jones and the Last Crusade*, *The Secret of Monkey Island* and *Loom* for Commodore's CDTV. We are also upgrading graphics, incorporating additional animations, adding new soundtracks and in the case of *Loom* we're retrofitting the original game to support a full voice soundtrack.

"*Loom* is our first exercise in CD. We call it a 'Talkie' and the reworked version sees the introduction of some lip syncing and broad term body language. At the moment we're taking games and fitting them with vocals, but it's then that you start to realise what you would have done differently if it had been designed for speech from scratch. In September 1992 Lucasfilm will begin full production of games with CD as their target medium."

The upside of this equation is that with the CDTV already on sale and the imminent release of the A690 CD drive, Amiga owners have a guaranteed stake in Lucasfilm's version of the future. The downside is that as games of this genre become bigger (*Monkey Island* is 7Mb) then disk-based games will just become less and less practical.

The investment in a hard drive could well be worth it though, when you consider that the licences for the *Star Wars* series have just lapsed. So now Lucasfilm have the rights to make games about their own movies. They've already done an action version for the Nintendo NES but as Doug Glen says, "Graphic adventures are the *right* format for movies".

REAL CD GAMES 'LOOM'

As to how CD games are going to differ to computer games, head of Lucasfilm Games, Doug Glen, used a cinema motif to illustrate his point: "In movie terms the current state of CDs is about 1905, when films were shown to the public on a regular basis. But it took until 1925 for zoom shots to be used. This was due to the different narrative language between film and theatre, people had only ever seen plays from one perspective – a distance. It's the same for CD, the narrative expressions haven't been discovered yet. Since it's never been done before no one knows about it until someone tries out new techniques".

EVERY GENERATION HAS its heroes and in this age of high technology and the home computer, it's the games programmers who have set an example that thousands of computer addicts dream of following. Images of games programmers swimming in cash or driving flash sports cars have served only to fuel the fanatical interest in the lifestyle of the successful games programmer.

Most computer users try their hand at games programming sooner or later, but the problem is, many budding programmers try to run before they can walk. Dreaming of writing a game that would put the likes of David Braben or Jez San to shame is all very nice, but you're in for a real shock if you think your initial efforts are going to be even close to the quality of *Elite*, *StarGlider 2* or *Lemmings*.

Point number one: even as a beginner, with care you can do some pretty good stuff. But trying to write a game that is beyond your capabilities is the quickest way of turning initial enthusiasm into eventual frustration.

We've all done it – back in the days when I was learning to program, I often attempted to

what can and can't be done. And that's where game creation packages come in.

As well as getting experts like Bullfrog, Vivid Image, The Assembly Line and Magnetic Scrolls to explain what's involved in programming a game, the other major part of this feature is doing it the easy way: game creation packages. Some of these, like the *3D Construction Kit*, involve very little programming, and then of a very simple kind. Others, like AMOS, are programming languages with extra helpful features plugged in. Either way, they can help you to start off as a beginner, or to try ideas out if you don't actually want to progress to coding.

For these you really just need an Amiga, and you're away. If you want to get into proper programming, you'll need a bit more besides. First, choose your programming language. Then look to your hardware.

You'll almost certainly need at least a megabyte of RAM (more wouldn't hurt) and a second drive is always a good idea. Better still, you'll find a hard drive a real life saver.

The not-so-tricky art of games programming

Many people see games programmers as super-human characters blessed with the brain power of Einstein, but you too can get in on the act. **Jason Holborn** points out exactly how...

write games that were far beyond my abilities. Designing the game and its graphics were a lot of fun to do, but when it came to the actual coding, I was stumped.

Not that you necessarily have to be good at coding. The way most modern software developers work is that a programmer works with an artist who does the graphics, a musician to cover in-game music and sound effects, and a game designer who acts like a producer and looks after the overall concept and makes sure that the game keeps its emphasis on playability as it develops. Nowadays, there are plenty of very good coders around; but what developers and software houses alike are looking for is new ideas for games.

Point number two: you don't have to be a programmer to get involved in games. But it is useful to have an idea of how games are created, which you can easily pick up just by reading this article.

If you're good at art, for example, develop techniques for doing interesting stuff in *Deluxe Paint* – that's exactly how most game graphics are done – but when you read this article, you'll realise you want to concentrate on making things look good while using a limited amount of colours. And if you want the most interesting of jobs, without ever getting your hands dirty, you can become a game designer. But you do need to understand the basic principles of how a game works, to know

especially when you start working on larger projects. You'll need a decent paint package to produce the graphics for your game: *Deluxe Paint III* or *IV*, or the complete paint package *The Graphics Workshop* which we brought you on the Coverdisk of Issue 30 (copies are still available for £5 from our back issues department, if you missed out) are ideal.

You'll also need a sound sampler (for producing effects) and a suitable music composition package. Most programmers use *Sound Tracker* clones like *MED*, simply because they are so easy to use. What's more, because many of them are available through the PD libraries, a decent SoundTracker isn't going to cost you an arm and a leg.

Kitted out with that lot and this feature, you're away, and if you sell your game to Psygnosis, we'd like a share of the profits.

L **PROGRAMMING LANGUAGES**

Any programming language you want is available on the Amiga, so if you've used PASCAL at college, you could use it at home. But there are three main choices.

Traditionally, BASIC is the beginner's programming language, but it's never really taken off on the Amiga. The best place to start is probably AMOS, which is a form of BASIC but with lots of extras, and it's used a lot for educational software because it can give colourful, simple results very easily. The language most used for programming serious applications is C, which you can use to write your own CLI commands, for example. But the only real option for top-class games tends to be assembly language, where HiSoft's Devpac 2 assembler is the one you should buy.

AS WELL AS writing some classic games like *Populous 2*, programming team Bullfrog take time out to teach assembly language programming to local youngsters. Chief frog, Pete Molyneux, explains how they go about it...

The big difference between learning from a book and learning the way we do it, is that books are too general to be any good. Pick up a book and they'll start teaching you about how to open a screen, or read the joystick port, and do all sorts of gubbins... which you actually require a very high level of technical knowledge before you can even do the simplest of things, just putting one dot on the screen, for example.

We take that level of expertise away completely. We start with a ready-made system that opens the Amiga up, displays a screen so you can start drawing sprites to it. Then it initialises the mouse, joystick and gets all that ready, so you don't have to worry about that. Because if you want to learn games programming, that's what you want to do: draw something on the screen. I would say that over half of every Amiga book I've ever read that teaches you programming, is taken up with just doing the trivial things.

Within five minutes of sitting down to learn programming, someone will have written a program: a very, very simple program to move a sprite on-screen. All they actually have to learn is just three assembly language instructions, and they are Move, Add and Jump to sub-routine. Jump to sub-routine they don't even really have to understand these.

The first thing to introduce people to is get them used to what registers are. They're really, really simple, it's just like a variable in BASIC. Then there's lots of different things you can fiddle around with. Eventually, they know just two instructions: for example, move.word #10,d0. Whatever the number is in d0, it could be from zero to 319, that is the position on-screen that the sprite appears at.

It's simple as that, so people can start messing around, moving the sprite around on their own. Then we can start using Add. So if I said move #10, d0, then d0 would equal 10. If I then said add £5,d0 then d0 would equal 15, so the sprite would appear at position 15. So that's it. You've just learnt two assembly language instructions!

The next step along is to do something a little bit more interesting, and that's to tie that sprite to the joystick, so that as you move the joystick backwards and forwards, the sprite moves backwards and forwards, so you're already building up a little program. Again, you're jut using the move and add instructions.

Then we add the use of a fire-button. That then launches off into a whole new area, which some people find quite hard at first.

HOW YOU CAN GET INVOLVED...

If you'd like to take advantage of the Bullfrog 'easy route to assembly language programming success', just send a cheque for... no, no, that's just a joke! The *Populous* programmers will start running a tutorial in this magazine either next month or the month after (we've got a few details to sort out first). They'll also be giving away the code 'engine' that can get you started, and we're trying to do a deal with the manufacturers of Devpac, the top Amiga assembly language compiler, to give you a low-cost route into programming. Watch, as they say, this space...

WHAT YOU NEED TO BE A PROGRAMMER

The Bullfrogs developed all their games, including the mighty *Populous 2*, entirely on the Amiga. They use the assembly language compiler Devpac 2 from HiSoft, *Deluxe Paint* from Electronic Arts for the graphics and animations, and the sound sampler *AudioMaster* for the sound effects. And that's all you need to produce a top-notch Amiga game!

Learning to program the Bullfrog way!

and that is, you start to want to have just more than one sprite on screen. When you press the fire-button, you want something to shoot out. So you've got to write a program that caters for two or more sprites.

That's where you start to use variables rather than registers. You've only got 15 registers, so you have to start using the memory of the computer to hold your values. The registers are actually on the processor, and there's only 15 of them on the poor old 68000. If you want to have something very very fast, then you do it in registers.

By now we've introduced the subject of animation, which is really simple. It's just taking whatever your artist has drawn and plonking it on screen. After we've got all that, with the sprite moving around with the joystick and using the fire-button and multiple sprites on screen, we then start to introduce some game tactics.

The first one we introduce is velocity. If you look at a game with a main sprite tied to the joystick, as you move the joystick to the left, the sprite doesn't instantly react and move to the left, it slows down and then slowly starts moving to the left. That's velocity. You've got a direction that your sprite is moving in, and a speed your sprite is moving at, and instead of just immediately changing that, you just slow the speed down and then invert the speed. You just start subtracting bits from it till the sprite's stopped and then building up to a maximum.

After we've done velocity it's collision, and again it's an important thing for games: how do you detect one thing hitting another thing, or a bullet hitting something? Simple. You've got one sprite moving on-screen: you've got

another sprite moving on screen: and you just compare their X and Y co-ordinates. It's just simple brute force, basically.

When the program's finished, there's one big loop, with lots of little jumps to subroutines. if you looked down that loop you would see: process the movement of the sprites; check for collision; check the joystick; draw the sprites on screen; display the screen; then go round and do the whole thing again.

After all this, you're well into creating a game. We then talk about various asides, like doing the scores, a high-score table and so on,

until eventually you have a finished game. Which you can then change and modify and create a totally new game. It has to be simple: if you try to be too ambitious, people get daunted. But it's a complete game: and if it were bigger, you'd look at it and think, "That's a finished product!".

There are a couple of things that are very useful to know before you start. The first is doing arithmetic – I know it sounds stupid, but it's amazing how many people don't, or haven't bothered for years – and the other thing is knowing about hexadecimal. And what's called Boolean algebra. Most people do it as part of a GCSE Maths course, but otherwise it's just a question of picking up a book, or asking at school. And you have to be able to understand co-ordinates. The Boolean operations you need to understand are AND, OR and NOT. Brush up on that, and you won't have a problem!
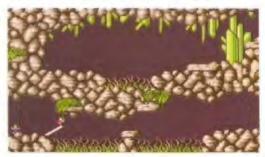
FROM NOTHING TO LEMMINGS... A CASE IN POINT!

Dave Jones is the man behind DMA Design and the mastermind of the infamous *Lemmings*, a game that is generally regarded as one of the best Amiga games of all time. Now available in both Amiga and CDTV format, *Lemmings* is even being written for the coin-op arcades. But Dave started his games programming career working on an A500, using nothing more than a copy of HiSoft's Devpac Amiga and *Deluxe Paint*.

Working in the evenings while not giving up his day job, Dave produced *Menace*, the game which set the foundations for the success that DMA now enjoys. This all goes to prove that you don't need thousands of pounds of equipment to produce a marketable game – a basic A500 with a megabyte of RAM and twin drives is more than enough.
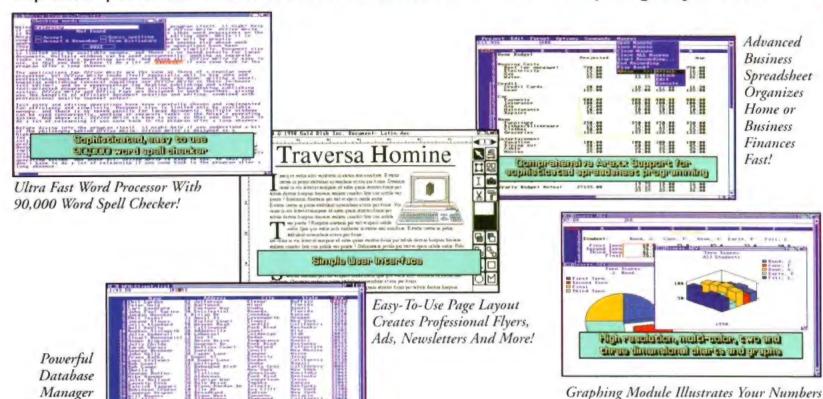
In *Amiga Format's* original programming series, way back in issue 7, he gave away the secrets of how *Menace* was made. The game itself was terribly simple: and in many ways, *Lemmings* is no more complex. If you'd read Dave's series in *Amiga Format*, it could have been you that programmed *Lemmings*. But it's having the idea that counts, and it was Dave who thought up the ingenious little creatures! Oh No! (See Page 68)

The programmers give away their secrets
Vivid Image on Arcade Games

The authors of the graphically outstanding First Samurai are definitely the ideal people to explain away the tricks that go into making a 'sprite-based' game look pretty bleedin' brilliant…

AMIGA GAMES? THEY'RE all exactly the same, aren't they? We're not casting doubt on their originality or gameplay, but the majority all use a similar programming technique. You may not think a platform game has a lot in common with a shoot-em-up, but they share a common concept – sprites.

Essentially, all you are doing in this kind of game is controlling a little bunch of pixels, and the pixels could make up a spaceship or a little feller who fires rainbows. Your little bunch of pixels is called a 'sprite' and it moves about over a background. Other sprites can make up enemies, or moving parts of the scenery.

To understand the main mechanics of this kind of game, all you have to do is think of it slowed down massively. The TV screen or monitor changes its picture 25 times a second, and it's between each change of picture that everything in the game happens. First the game reads the joystick input, to see where you've moved your player sprite to. Then it moves all the other sprites according to the paths set down in the program. Then it sees if any sprites are overlapping: this is what's called collision detection. If so, it'll trigger off an explosion or whatever: if not, you carry on.

That's the basics. But how are experts like Vivid Image thinking when they develop a game?

Most programmers prefer either 32 or (more commonly) 16 colours. For First Samurai, Vivid decided upon a 16-colour screen, allocating eight colours to the main sprite (your samurai) and the remaining eight for the backgrounds. The Amiga's HAM mode is rarely used by games programmers apart from the occasional static title screen. Some programmers take advantage of the 32 colours available in low-res, but not all.

The next step in designing a game is the sprites. It's important to decide upon the colour palette and then stick to it. It's possible to change colours from level to level, but each level has to use the same colours throughout. Even then, only changes to the last eight can be made because the main sprite has to remain the

same colour regardless of which level you are on. Once the colours for the sprites are decided it's time to calculate how many pixels the screen is to scroll when a sprite runs across the screen, allowing the animation to look as convincing as possible. Next is how many frames the game is to run in. For those of you that don't quite understand this, we'll explain…

Every game, be it sprite-based or 3D, is based around a loop that performs all the functions that must be carried out for the game to run. Every time the loop is performed, the screen is redrawn once, so the faster the loop is performed, the faster your game will run.

But you don't necessarily want the game to run at 25 frames per second. If your animation runs too quickly, your character will walk too fast, so it's vitally important to break the animation down into a precise number of frames so that the character doesn't walk too fast or too slow.

When it came down to designing the sprites for First Samurai Vivid Image tore pages out of Walt Disney's book, borrowing some animation techniques. For example, the main character isn't in proportion to a real human – he's very squat. If you saw him walking down your local high street, you'd feel rather sorry for him, but in the game it looks right.

Even the process of drawing the sprites within First Samurai wasn't straightforward. To save memory, Vivid split the main sprite into three boxes, each 32 pixels wide by 24 down. Using this technique, Vivid could use the same leg sprites over and over again, even though the main character may well be waving his hands around like a demented karate expert. Obviously this technique can't always be used, but the saving in memory when it can be used is tremendous.

> "Backgrounds for games like First Samurai are not just huge images held in memory, they are built up from blocks in a similar way to a jigsaw."

As well as the main sprite images, you also need to create a mask for each, which is basically a blacked out representation of the sprites. It's often best to add an extra pixel around the borders of the mask so that when the sprite is overlaid on top of the mask, an outline is formed around the sprite. This can help to separate the main character from the background when the two use similar colours.

The backgrounds for games like First Samurai aren't what they appear. You may think they are simply huge images held in memory, but surprisingly they are built up from blocks in a similar manner to a jigsaw.

However, unlike a jigsaw, game backgrounds are often built using the same piece over and over again. If you wanted your background to consist of a brick wall, although the wall appears to be hand-drawn, it could easily be constructed using a single 16 by 16 pixel block pasted over and over again.

Similar to the background map is the 'edge of road' map which is used to determine what sprites can walk on, what's solid, what you can jump through and what you can climb. The edge of road map is similar to the background map as it too is made up of blocks, but you can't see them. To stop the main sprite from floating in mid-air, the blocks that the edge of road map uses are considerably smaller than the blocks used by the background map.

With all those graphics ready, here's how the main game loop would run. First, move the main character. Second, see if he's triggered anything off. Third, draw the screen: backgrounds then sprites. Fourth, check the player's status: has energy gone below zero? Then you're ready to do it all again.

1 Once you've decided upon the type of game that you wish to write, the first thing you must do is design the sprites that will be used within your game. To make life nice and easy, AMOS comes complete with its own sprite editor program which can be loaded as an accessory within the main AMOS program. This powerful utility can be used to create what AMOS calls 'sprite banks', which are groups of sprites.

Like the programmers at Vivid Image, it's very important to take into account what colours you can use for sprites and what colours are to be used by the background. 32-colour sprites look nice, but they're not really that practical unless you intend leaving the background blank.

2 As we've already discussed, professional programmers incorporate backgrounds into their games using a system which splits the background into blocks. AMOS can use this technique too, thanks to a powerful utility called *Total AMOS Map Editor* (*TAME*).

Tame allows you to cut either 16-by-16 or 32-by-32 pixel blocks out of a standard IFF image (like a *Deluxe Paint* picture) and then place them down into a background map, reusing blocks where necessary. Obviously you'll need to have a paint package to prepare the IFF image that *Tame* works on, but the rest of the work is handled for you.

The current release of AMOS doesn't support *Tame* map files, but you can still take advantage of this powerful facility by ripping the *Tame* routines out of the AMOS demo game Magic Forest. The authors of *Tame* intend to produce an extension to AMOS that will build this facility into AMOS BASIC.

Writing arcade games the easy way

There's no easy way to learn to program. A game-making kit can help, but your best bet is to start with the simple but powerful programming language AMOS, as **Jason Holborn** explains.

IF YOUR BRAIN can't stretch to the complexities of assembly language, the next best thing is undoubtedly Mandarin's AMOS, an absolutely superb BASIC-like programming language that combines the power of assembler with the ease of use of good old BASIC. From day one, AMOS was designed with games in mind and as a result it can handle virtually every aspect of writing arcade games.

You want sprites whizzing around the screen at break neck speeds? You've got it! You want to scroll the screen smoothly? You've got it! You want to build up game maps just like the professionals? You got it! You want the bouncers to dress in pink? Er... well, AMOS can handle nearly everything.

If the thought of coding even in AMOS reduces you to a quivering wreck, then there is another option. Palace's *Shoot-Em-Up*

Construction Kit (*SEUCK* to its friends) is a simple step-by-step kit that lets you create simple vertically-scrolling shoot-em-ups along the lines of *Battle Command* and *Hybris*.

It's hardly on a par with the power of AMOS and it's starting to look rather long in the tooth these days, but it is no longer produced by the manufacturers so you can pick it up surprisingly cheaply. It's a worthwhile purchase for anyone who wouldn't know an opcode from a bag of fish-and-chips.

Anyway, let's get down to the business of writing a game. We've used AMOS as the example language because it is by far the most popular and most powerful package available that can handle the job. Basically it's BASIC programming, but AMOS includes a number of tools rather like the Editors that games professionals use. Let's see how it works...

3 Once all the sprite data and backgrounds for your game have been prepared, the next step is to think about how you'll approach the coding. Obviously it's not really advisable to dive straight in and get coding, so the first thing you must do is to break your game down into separate sections which can then be coded into separate routines. For example, you'll need a routine to move all the sprites, another to redraw the screen, another to check for collisions and so on

To start with, though, you need to pull in your sprites using the AMOS LOAD command. This command only needs to be called once as all the sprites for your game can be stored within a single bank.

4 Guess what comes next? Yes folks, once again we need a double buffered screen. Even if you're using hardware sprites only, it's still worth using a double buffered screen if any section of the background image changes. Of course if it doesn't, then you can get away without double buffering, but it's very unlikely that you wouldn't use blitter objects simply because of their flexibility.

Using the *Tame* handling routines we stole from *Magic Forest*, we now need to draw the background in our spare screen. Once this is done, any bobs that we are using have to be drawn in. This is achieved using the BOB command which not only draws in the bob, but can also be used to move the bob simply by specifying new X and Y co-ords for the bob's position on-screen.

5 So far we've got our background and bobs to appear on the screen, but we now need to actually breathe life into our bobs. All bobs other than the player's character can be updated simply by feeding new co-ords to the BOB command, but no doubt you'll want to control the player's bob via a joystick.

Implementing joystick control is very simple indeed. All you need do is define two variables which will store the bob's current X and Y position. Then just get the joystick position by reading it with the AMOS system variable JOY. This variable will be a different number according to which way the joystick is pointed. If JOY equals two then the joystick's pointing down so you subtract one from the X variable, if it is three then you add one to the X variable and so on. Furthermore, you can read the joystick fire-button by checking when the value returned by JOY equals four.

6 Collision detection is also very easy to implement within AMOS. AMOS includes five commands which handle this – SPRITE COL (which detects a collision between two hardware sprites), BOB COL (collision between two bobs), SPRITEBOB COL (collision between a single sprite and one or more bobs), BOBSPRITE COL (collision between a single bob and one or more sprites) and SET ZONE (which defines a rectangular zone anywhere on the screen which can be checked to see if a sprite or a bob has come into collision with it).

In most games you will be primarily interested in the BOB COL command, although the SET ZONE command can also be used when you wish the player's sprite to interact with the background.

7 One very powerful feature of AMOS which very few AMOS users seem to exploit is AMAL, AMOS' powerful interrupt-driven animation language. AMAL can be particularly useful when writing games as it can be used to handle some of the more mundane tasks under interrupt, leaving you with far more processor time at your disposal.
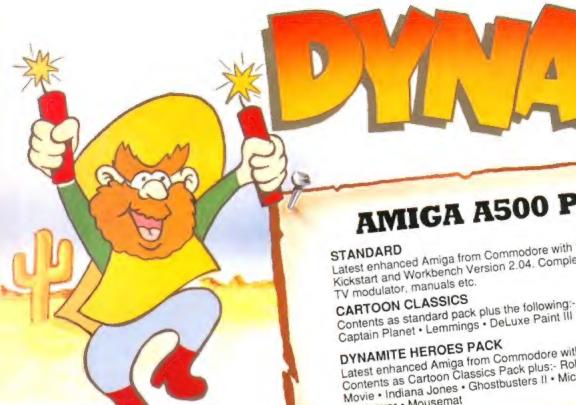
Under interrupt just means the computer runs off and does it on its own. For example, such things as hardware scrolling or the movement of computer-controlled sprites can be implemented using AMAL, often resulting in a much faster game.

As a general rule, if you think a routine could be implemented under AMAL, then do so. Programming in AMAL may not be particularly enjoyable (the AMAL instruction set is hardly user-friendly), but a much faster frame rate will be your reward.

8 Now all that remains is to add the actual gameplay into your AMOS game. Even writing a game using AMOS may seem like an almost impossible task, but you'll be surprised just how easy AMOS makes it. As always, the key is to break your game down into steps. This way, you can concentrate on specific parts of your game without getting overwhelmed with the complexities of the game as a whole. Of course this tutorial has rather simplified the whole process of writing a game in AMOS, but the foundations are there for you to build upon.

Using AMOS is undoubtedly one of the simplest ways to get into proper games programming, this is simply because so much of the work is done for you. You can add such things as interrupt-driven music to your games with just a couple of commands, without having to worry about setting up hardware interrupts and all the other kinds of techie mumbo-jumbo that the professionals have to cope with.

The programmers give away their secrets
The Assembly Line on 3D

3D games are the most complex to write, but the ideas behind it are fairly simple. We asked The Assembly Line, famous for 3D classics like Interphase and Cybercon III, to explain how it's done.

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BECAUSE IT SQUEEZES the maximum out of the machine, 3D coding is a competitive and very prestigious area of programming. One of the most proficient of 3D developers is Bristol-based The Assembly Line. We asked key 3D coders Andy Beveridge (Cybercon III) and Adrian Stevens (Interphase) to describe how you would go about creating a 3D game from scratch.

All the objects – alien space craft, buildings, furniture in a room – are made up of flat shapes called 'polygons'. Each one is stored in the memory as numbers that define the X, Y and Z co-ordinates of each corner of the object. For example, a square would have four, one for each corner, each made up of three values that define the point's X, Y and Z position in 3D space.

All 3D objects are made up of these flat polygon shapes: a cube is composed of six squares, positioned so that the edges meet. And you make up your whole 3D world this way. This side of 3D programming is very straightforward for anyone who did co-ordinates at school, the difficult bit is turning these imaginary 3D objects into what you see on the screen, which is two-dimensional.

The first step in programming a 3D game is preparing a 'polygon filler'. This draws horizontal lines across the screen. When you've turned your 3D polygons into 2D shapes and put them on the screen, your polygon filler can fill them in so that they are solid.

Right, let's get to the heart of the matter: turning 3D polygons into 2D shapes. It involves two steps. The first step is to work out how an object looks from the player's point of view. The second is to apply 'perspective' to the polygon, so that it gets smaller as it gets further away: this is where your 3D shape becomes 2D. How's it done? It's just pure maths.

The technique the Assembly Line use to work out the viewpoint is multiply each co-ordinate by a matrix. Where does the matrix come from? Well, when you view a 3D object defined by X, Y and Z co-ords, you

may not necessarily view it from the same angle every time. What you do is define a matrix (remember matrices from your old maths books!) which represents the rotation you apply to this shape, so that it looks right to your eye. You end up with a new set of 3D co-ords which are effectively 3D co-ords relative to your position, rather than relative to a fixed position.

Adding perspective to 3D objects is quite simple once you know how. Because you want your 3D objects to appear smaller when you are further away from them, all you have to do is to divide the X and Y co-ords for your polygon by its own Z co-ord, resulting in smaller X and Y values.

If you think about it, this is a simple enough idea: the further from an object you are, the greater the value of Z will be. The greater the value of Z, the smaller your X and Y will be when they're divided by it, so the smaller the object will seem to be. As you're moving away from an object, each time you divide X and Y by Z, the X and Y co-ords will decrease because the Z co-ord is increasing. Simple eh?

Now you've got polygons which are 2D (they only have X and Y values) and have perspective applied to them, you're almost ready to get them drawn on the screen. But there's one more important step: the Painter Algorithm. This is used to sort the objects into rendering priority – ie, the objects which are further away from the player's location are drawn first.

This can often result in the program having to draw over the top of an object it has already drawn, but this is the fastest way of working. If you tried to write a routine that only drew what the player could see, it would slow the game down tremendously. You never

see the computer drawing objects which are behind other objects because – like most other games – 3D games rely on a technique called 'double buffering', to reduce flicker. This means the computer holds two copies of the play screen in memory at once. While it's displaying one, it starts work building up the second in the spare screen. Once the screen is rendered, it then displays it and starts redrawing the first.
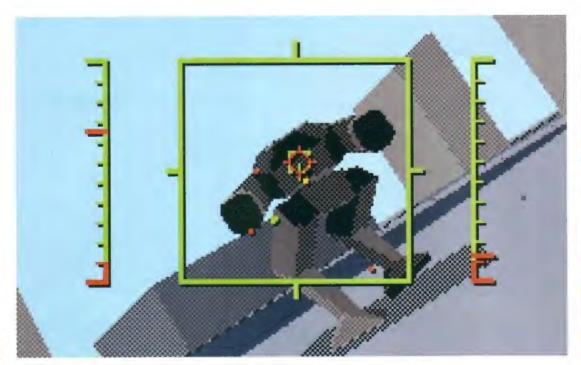
As you get close to a 3D object, it's impossible to view the entire object on the screen. For example, when you're far away from a person, you can see all of them but as you walk nearer, you only see the top half of them. To stop everything going haywire when this happens, you need 'a clipping routine'. This decides what can't be seen within the screen display and 'clips' it off, forming a nice, rectangular screen display.

Another important routine that you'll need is a polygon sorter. If you were to view a cube, you'd never be able to see all six of its faces: three is the most you'd ever see. A sorter routine decides which faces you can see, removing the need to draw those that you can't. In the case of our cube, this would cut the processing time in half as only three of its six faces need to be drawn.

The simple way to do this is to define all the points for a given face so they run clockwise. Once they have been translated into 2D, if they still run clockwise, then you can see that face, if they don't, then there's no need to draw that face because it can't be seen.

The techniques are complex, and if you want to read more, flick back to *AF* 23. But even the pros don't start from scratch each time. Over the page you can find out how to take advantage of someone else's hard work, and use it to make your own 3D game the easy way!

> "3D programming is straightforward if you did co-ordinates at school, the difficult bit is turning imaginary 3D objects into what you see on the screen."

Writing 3-D games the easy way

If you ever wanted to write your own 3D game but couldn't face the mathematics, **Jason Holborn** offers two alternatives: a ready-made game creator that gives you the power of the famous Freescape system, or a programming language that works a bit like a 3D graphics package.

SOMETHING THAT IS as processor-intensive as 3D games ideally needs the speed that assembler provides, but that doesn't mean that you need to have a degree in mathematics and an intimate knowledge of the 68000 to write a 3D game. Anyone can get in on the act.

By far the simplest 3D game creator is *Incentive's 3D Construction Kit*, a powerful DIY games creator based around the successful Freescape system that was pioneered within their own game titles. Anyone who has played *Castle Master, Total Eclipse* or *Darkside* will have seen Freescape in action and the *3D Construction Kit* allows you to put this fascinating 3D system to work within your own unique games.

For AMOS owners, Europress have come up with AMOS 3D, an extension to AMOS that adds the power of 3D to AMOS's command set without having to worry about the technicalities involved. Designed and written by Voodoo Software (they of *Xiphos* fame), AMOS 3D is perhaps the most powerful 3D

game creator yet devised for Joe Public's use. This quick tutorial is based around AMOS 3D, but it's equally possible to produce similar results within the *3D Construction Kit* with the added benefit that you don't need to get your hands dirty writing program code.

AMOS 3D is a language extension to AMOS that adds new commands to the AMOS instruction set, allowing complete control over 3D objects. AMOS 3D actually consists of two separate modules – the language extension itself and a powerful object modeller which is used to create the objects that will inhabit your 3D world. Europress claim that you could create *StarGlider 3* with it, but let's see what it's actually capable of.

Working with 3D may sound very complicated, but AMOS 3D has made this previously difficult pursuit into absolute child's play. Go on, have a go for yourself – I think you too will be surprised just how easy to use AMOS 3D really is! Here's how it works...
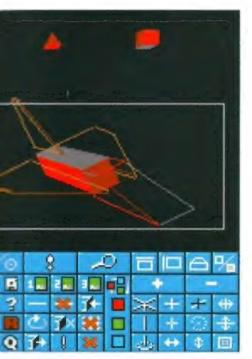
1 The first step is to design the actual 3D objects that will inhabit your 3D world. This is achieved using a very nicely presented object modelling program. Objects are constructed by building them up from a set of four 3D graphic primitives. Primitives are basic shapes: rectangles, pyramids and so on.

Each object can be constructed from up to eight primitives, but this limitation can be bypassed by taking advantage of AMOS 3D's surface texture facility, which allows you to add patterns to any face of a 3D primitive, giving the illusion of a far more complex object.

2 Once all the objects have been safely saved off to disk, it's time to enter good old AMOS. Like 'real' 3D games, it's best to use double buffering as it cuts out any flickering that may occur each time the display is updated. So, before you do anything, you want to tell AMOS that you want to use double buffering by adding the DOUBLE BUFFER command to the section of code that sets up your game's screen display.

You'll no doubt want to add a background (the horizon, for example) and you can do this using the 'Td BACKGROUND' command. Backgrounds take a while to draw, so it's best to limit your background to as few colours as you can get away with. 3D objects really come alive when placed against a background.

3 So your screen display is ready, what we now need is some 3D objects to work (play?) with. They are held on disk, so you will need to load them into AMOS using the 'Td LOAD' command. This doesn't actually display them – it merely pulls them into memory and tells AMOS where they can be found.

The next step is to define your position in 3D space and the position of any objects either as local (to your position in 3D space, that is) or world co-ords. World is by far the easiest method, but local can be handy when you want to have 3D objects to act according to your position (an enemy plane, for example).

Once you've successfully loaded them, all that remains is to display them. Because the 'Td LOAD' command only supplies a pointer to a 3D object, it can be displayed on-screen as many times as you want removing the need to define separate data for each object – you could, for example, have a fleet of tanks all of which use the same object data.

AMOS allows you to have a maximum of 20 objects on-screen at one time, each of which must be defined using the 'Td OBJECT' command. This also tells AMOS where in 3D space the object is to be situated, expressed as a set of 3D co-ords (X, Y and Z).

All that now remains is to draw the objects into the hidden screen and then swap the screen to make your 3D objects visible. This is achieved using 'Td REDRAW' and 'SCREEN SWAP'. You should now see your 3D objects in all their glory.

L **JOURNEY TO ANOTHER DIMENSION**

3D games came of age with 16-bit technology, as they were the first machines that were really able to competently handle the complex maths at the necessary speed. Their appeal comes from the fact that a complete world can be modelled to suit the designer. This technology has traditionally been used for flight simulations, but is now beginning to break down the generic barriers, with games like *Cybercon 3*. These games don't look as pretty as the flat 2D 'sprite' games, because all the objects have to be created from flat polygons. What they offer though, is the chance to pilot/drive vehicles that you'd never be allowed anywhere near in the real world.

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4 Unfortunately, our 3D objects aren't actually doing a lot at the moment. In fact, they're doing nothing at all. Obviously you'll want to make things a tad more exciting by moving them about. AMOS 3D supplies a number of commands which will allow you to move your objects about, but the main two are 'Td ANGLE' and 'Td MOVE' (or 'Td MOVE' REL). 'Td ANGLE' simply rotates an object on a set of axes based on the centre of the object. On the other hand, 'Td MOVE' moves the object in 3D space.

5 But what happens if you want to move yourself within 3D space? Well, AMOS 3D can handle this too. Although the 'Td OBJECT' command only allows you to define 20 objects, AMOS 3D actually handles 21. That extra object is you – or at least your viewpoint. Simply by using exactly the same movement commands as you used in step four but telling them to act on object 0, you can move your viewpoint around in 3D space.

The 'Td OBJECT' command will not rotate your viewpoint though, therefore you'll always be looking in the same direction. To rotate your viewpoint, you simply need to use the 'Td ANGLE' command to change the 'attitude' of your viewpoint.

6 So far we are able to move around in 3D space, but what happens when you walk into another object? At the minute all that will happen is that you'll walk straight through the object as if it wasn't there, but you can make your solid 3D objects truly solid by checking for collision detection.
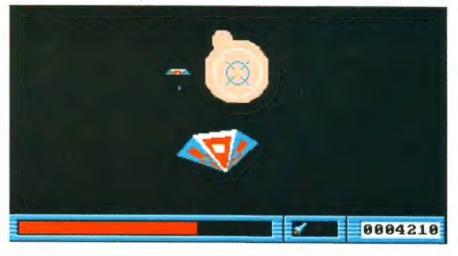
The collision detection system used by AMOS 3D is based around the theory of zones which is best thought of as an invisible spherical forcefield that surrounds the objects that you wish to keep track of. Zones are defined using the 'Td SET ZONE' command and you can check for collision between zones using the 'Td COLLIDE' command.

7 speed is of the essence within a 3D game and this becomes doubly true when working with AMOS 3D. If you've got 3D objects surrounding you, you won't always be able to see all of them, so it's worth checking which can be seen and which can't. If the object can't be seen, then kill it. The command which lets you check whether an object is visible or not is Td VISIBLE.

8 What we now have is the workings of a 3D game. The actual gameplay is entirely up to you, but it's very simple indeed to get things such as flight combat simulators up and running using the powerful commands that AMOS 3D provides. Say, for example, you wanted to fire a missile at a moving object, all you would have to do is to get the position and range of the object you are firing at using the 'Td BEARING' command. Using the 'Td ANGLE' and 'Td MOVE' commands, you could then have your missile follow an object until it finally impacts producing an explosion (an animated a bob). ☉

"This is probably the *best* games creation utility available... **X RATING: XXXXX**" GAMES X "It takes just minutes to learn and the results are *superb*.... It's packed *with* features and frankly, never has game-making been so easy. You'd be *mad* to miss this opportunity!... " ITV ORACLE C4 "For a total package of all-round *fun* and *entertainment*, the 3-D Construction Kit is an absolute must for the price... **98%**" AMSTRAD USER "**3D Construction Kit** is one of the *best* 16-bit utilities to appear – ever!... Whether you're just interested in using it as a 3D art package or whether you want to create games to rival Incentive's own, you'll find it to be an *ideal tool*... **93%**" THE ONE "Anyone interested in 3D adventure games and a spark of *imagination* should check it out immediately... Stunningly easy to use... The highly *powerful* set of tools, combined with *amazing* ease-of-use, make this an unrivalled game creation system... **91%**" AMIGA FORMAT "Amazing. Would-be architects, city planners, and everybody else should start saving their dosh now!... *go out and buy it*... **92%**" YOUR SINCLAIR "It's A Corker!... **93%**" COMMODORE FORMAT "*A stunning achievement* on the home computer made even more *impressive* by it's ease of use... Lets face it you could buy a lot of rubbish for 25 quid so do yourself a favour and invest it *wisely* in this... **91%**" SINCLAIR USER "An *extremely versatile* piece of software, *technically amazing*, easy and *great fun* to use. This could be the future of home micro software, go and buy it!... **100%**" YC "The program reeks of *quality*... **3D Construction Kit** is easily the most *innovative* piece of Amstrad software ever... **95%**" AMSTRAD ACTION "Forget world domination this is *world creation*... **91%**" PC FUN "You can use the kit to design your own 'alternate reality'... " PC LEISURE "This is an *excellent* game creation utility... Whether you want to create whole games for friends or models of your house to fly over, it's simple to use and *great fun*!... " CRASH "It's *incredibly simple* and *versatile* system. Clearly it gives insight for the novice into how 3D programming works... " AMIGA FORMAT "Not only can you construct 3D environments, you can walk into that end and interact with your surroundings.... " ZERO "Lego Blocks for adults and your own *Virtual Reality*... " ST FORMAT "There's no doubt about it, this could be the *most impressive* game creation utility ever released... " ACE "Incentive have pooled their *extra dimensional* talents to create a games designer the likes of which has never been seen before... **3D Construction Kit** is *amazing*. It's easy to use and the *results are stunning*.... " CD AMIGA "If you can think it, you can build it... it's as simple as that... **95%**" ST. FORMAT (GOLD) "At last we have a program that gives us the *freedom* to produce whatever we want... up until now, no tool has been devised that allows the user to produce a fully fledged 3D environment... **90%**" AMIGA ACTION

Professionally-produced adventure game creators have been a little thin on the ground. Now Oxxi/Aegis have come up with the goods in the shape of a brand-new adventure-making system. **Jason Holborn** ventures forth...

Visionary
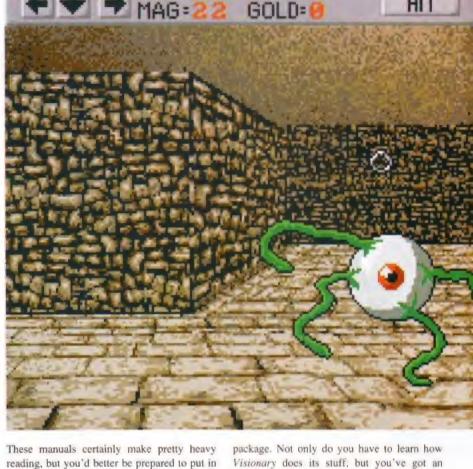
Adventure game creator ■ £59 ■ Aegis

SOFTWARE DEVELOPERS ARE usually a perceptive lot, but in the case of the adventure creator, they've failed miserably to provide Amiga owners with the kind of utilities that other computer users have been using for years. Take Incentive's *Graphic Adventure Creator* (GAC), for example. Despite the fact that it was released for both the Commodore 64 and the Atari ST, Incentive have remained unwilling to produce an Amiga version.

Oxxi/Aegis have spotted an obvious gap in the market, that other developers seem unable to fill, and they have come up with the goods in the shape of *Visionary*, a powerful adventure-quilling utility that Aegis claim can handle just about any adventure-writing task you wish to throw at it.

From first impressions this claim certainly seems to be true – the two demo games that are bundled with *Visionary* are easily of commercial quality, which certainly seems to bode well for anyone who wishes to create adventures without getting their hands dirty with such monstrosities as C and assembler.

Visionary **arrives on** three disks (two of which contain the two demo games) with two rather bulky manuals. The first manual details the operation of *Visionary* while the second is a more advanced guide for those wishing to get the very most from Aegis' new baby.

Now here's a real demonstration of Visionary's power. Believe it not, but this Dungeon Master clone was written completely using Visionary!

These manuals certainly make pretty heavy reading, but you'd better be prepared to put in a few hours just studying them as there's absolutely no way you'll be able to use *Visionary* without them.

Why is this? Well, the truth of the matter is that *Visionary* isn't exactly what we all expected it to be. *Visionary* is actually a programming language optimised for the production of adventure games – think of it as the AMOS of adventures if you like.

So what does this mean in layman's terms? Well, as any AMOS programmer will tell you, there's no way that you'll be able to churn out a hit game in your first few days with the package. Not only do you have to learn how *Visionary* does its stuff, but you've got an almost completely new command set to wade through. Time for shock number two – *Visionary* is completely CLI-based. All the programs that make up the *Visionary* development environment are run from the CLI, therefore you've got to know at least the basics of AmigaDOS to even get started with *Visionary*. The *Visionary* development environment consists primarily of two programs – a two-pass compiler and a linker (no, it's not BLink). Apart from a few extra little bits and pieces, this is all you get for your money.

VISIONARY STEP-BY-STEP
As we've mentioned above, *Visionary* is actually a programming language, therefore getting a decent adventure up and running takes some time. Here's how it's done.

The Amiga Format Adventure

1 Before you even switch on your Amiga, the first thing you must do to is to plan your adventure by drawing a map of all the locations within it, and remember to keep in mind at all times what the player must do to complete your adventure game. Each different location must then be clearly linked and any of the movable objects placed in their starting position.

2 Once you know what you're trying to achieve, the next step is to write the *Visionary* source code for your adventure. It's well worth writing the game in steps, compiling your code after each step to make sure that what you have actually written works properly. To start with, you want to enter all the map data into *Visionary* complete with the descriptions for each room and then test that you can move around the map using the links you have drawn in.

You also have to create an .ADV file that tells the compiler the file names of the other source files and other such important information including things like the start location of your adventure.

Once this is done, you can then move on to the more complex task of putting in the objects and the puzzles within your game. This is by far the most time consuming task.

So how do you go about creating an adventure? The first step is to write the source code to your adventure using a conventional text editor like Cygnus Ed, save the source to disk and then compile it using VCOMP, *Visionary's* compiler. Providing it compiles without errors (which is unusual), you then pass the output (the object module) to VLINK, *Visionary's* Linker. Once your adventure has compiled and linked, it is effectively a stand-alone program which can be copied and distributed to your heart's content (as long as you credit Aegis within your program!).

Unlike most languages, *Visionary* programs don't consist of just a single source file.

SENSE OF ADVENTURE

Adventures started out as text-only games where players interacted via a parser. These were massively irritating and would be forever coming up with messages like "You cannot carry the South". As machines became more powerful so did the form adventures took. Now it is wide ranging genre of many different forms. There are First Person Perspective games (*Knightmare*), graphic adventures (*Monkey Island*) and text adventures (*Suspicious Cargo*). Whatever their form though, they all stress methodical exploration, where objects are collected and used at specific points. They are not speed dependant but require constant analysis of your kit and situation.

Each aspect of the game is split into its own discrete file that defines everything the compiler and linker needs to know. Each of these files must have the correct file name extension if the compiler is to recognise them.

The most important of these is the .rooms file, which defines the map data for your adventure. Each location in your adventure must be defined separately with its own unique label. Structured in a similar manner to an AmigaBASIC subroutine, each room definition must contain important facts about a room, including which exits are available and what happens when the player enters the room.

The objects that inhabit the rooms within your adventure are defined within a separate objects (.obj) file. In turn, there are two types of objects – non-movable objects and movable objects – both of which have to be defined within separate files. Non-movable objects are things that the player can examine but can't actually move (the ground, for example) and movable objects are things that the player can physically pick up (a key, for example).

At the very simplest level, an adventure must consist of two files – the .rooms file and a .adv file. The .adv file is the file that ties all the other files together and is also used to set up variables and make a few general-purpose definitions. This is the file that the compiler processes, passing on to others via definitions set up within this file.

Visionary adventures aren't just restricted to text. Using its very powerful screen buffers facility, you can create anything from a simple graphic adventure along the same lines as Magnetic Scrolls' *The Pawn*, to a completely graphic-based adventure like FTL's *Dungeon Master*. Aegis have included demos that demonstrate the two types of adventure that it is possible to create within *Visionary*. The *Dungeon Master*-like game that comes with *Visionary* is particularly good, matching *Dungeon Master* feature for feature.
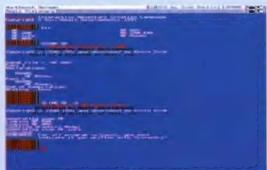
You can also incorporate IFF sound effects and even MED song modules into your adventures with ease, giving them a professional finish. *Visionary* provides all the commands you need to handle these, leaving you to worry about the mechanics of your game. Despite this, you're still left with a fair bit of work. For starters, if you decide to split the screen (a picture at the top and text at the bottom), then it's up to you to handle most of the work involved in maintaining the screen display.

There's no doubting it's power, but I can't help thinking Aegis haven't really made the process of writing adventure games that much simpler. With powerful Basics like AMOS now commonly available, even the greenest of coders could knock out a half decent adventure in time, complete with all the aesthetic features that *Visionary* provides.
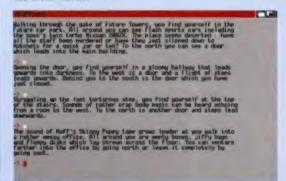
Another problem is the rather long-winded nature of *Visionary's* source code format. Having to write about five separate source files before you can get anything running is a little over the top and can only lead to confusion. What I would have liked to have seen is a few utilities that make the process of defining the basic structure of your adventure far less time consuming – a map editor, for example. Such a utility could generate the bare bones of your adventure as source code, leaving you to put the meat onto those bones.

I'd like to say that I'm impressed by *Visionary*, but I'd be lying. As Incentive's GAC has proved, there are far simpler ways of producing adventurers in a fraction of the time that it takes with *Visionary*. The potential for a great utility is undeniably there, but *Visionary* has to be made far more user friendly before anyone other than hardened coders will take it seriously. Roll on *Visionary 2*!
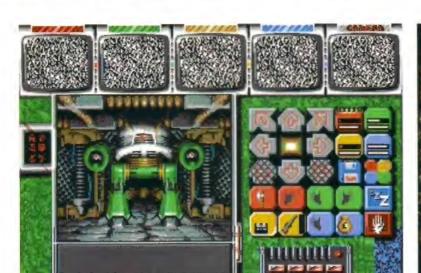
3 Once your source code is complete, all that remains for you to do is to compile and link your game into an executable. Don't be scared off by this – *Visionary's* compiler and linker are by far the simplest to use programs of their type you're likely to find on any machine. There's no complex command line arguments to enter, just pass them the file name of your adventure and *Visionary* does the rest.

4 OK, I know that it's pretty simple enough stuff, but this text-based adventure was knocked up in little more than just a couple of hours. Once the bare bones of your game are complete, you can then start thinking about adding graphics and sound effects.

Visionary

SPEED	● ●
Writing adventures with *Visionary* is a very time-consuming task!	
DOCUMENTATION	● ● ● ●
Complete with two well written manuals that help to make the package easier to use.	
ACCESSIBILITY	● ● ●
Hardened coders will love it, the average Amiga user may end up feeling rather frustrated.	
FEATURES	● ● ● ●
There's no doubting its power, but adventure writing could be made less code-intensive.	
VALUE	● ● ●
Not that bad for the money, it isn't particularly simple to use, let's hope version 2 is better.	

Verdict **65%**

The programmers give away their secrets
Tony Crowther on Adventure Games

So you want to create your own role-playing adventure but don't know where to start? Don't worry - it's a common problem according to one of Britain's top coders: the man behind Captive and Knightmare...

THE FIRST THING to do is think of a raw plot – it usually ends up nothing like the finished game anyway. The best thing to do is sit down and try to come up with as many different, simple elements as possible. It's almost like playing with Lego - you get all these little ideas and then you build a game from them.

In *Knightmare*, for example, I put some trains in which rattle along a piece of track from one end to the other. Then I realised I could use them for something else, like moving platforms. So there's now bits where you stand on a moving train and throw objects from it onto pressure pads, and there's another bit where you jump off a train, through a gap and land on another train. That's how you start building your game.

You can make a game gradually harder, so that people learn things and feel like they've gained some experience. In *Eye Of The Beholder*, by the time you've played the whole game through there's no sense of progression. *Knightmare's* basically a series of logic problems. With all these simple ideas you can bolt them together and make things fairly complex. *Knightmare* has lots of what I call 'toys' to play with It's stuff you can do if you can't tackle part of the adventure: peashooters, chainsaws. tennis racquets and balls, dice and so on.

The real elements are flexible, plus people can relate to natural things far easier. Like water, you can't cross it unless you travel in a boat, so you have the problem of getting a boat, and then getting it in the water!

I like to lead people along the wrong lines to keep them busy: there's a big room in *Knightmare* with a monster in it. If you kill the monster it drops a twig. Now – the whole room's full of pressure pads, if you drop the twig on the right one, it does something. There's an invisible wall with a single pressure pad on it so people will think that that's the one – it's difficult

to find, so that must be it. But it's not – it's another pressure pad in the middle of the room. You have to fool people, but you have to be careful not to confuse them, otherwise they will just give up.

It's important to build your characters from statistics that have something to do with the gameplay, and make them as real as possible – like injured or tired characters can't carry as much and aren't as efficient. Then people can believe that they're playing an adventure of reality rather than just a game.

One thing I've discovered about RPGs is that there are two ways of playing. You can make all the monsters easy to kill and the logic problems really hard, but people get bored with those. I've done it the other way around: the monsters are really hard so it can take ages to hack 'em to pieces but you do get a really satisfying feeling. And then you get the sense of achievement of solving a puzzle afterwards. One game which used this really well was *Bloodwych*, whereas the *Eye Of The Beholder's* monsters were too simple to kill. What I also like to do is make sure that the actual types of creatures don't actually get any harder to kill – instead I'll introduce a new creature.

You also need some nice monsters, good expressions and stuff. Make the monsters behave like they look. They should have hit points and they need two speeds of thinking: one for movements around the rooms, and the other for their attacking speed.

Spells are always fun. In *Knightmare* there about 48, and every one reacts differently to each monster. For example, the weakest spell could divide one monster's hit points in half and double or quadruple another's. This way, not only do you have to work out how to use the spells, but you have to work out which spells you can use where.

> **"Making up an adventure game is almost like playing with Lego - you get all these little ideas in your head and then you build a game from them."**

It has to be possible to map the game – and you have to make it worth mapping. *Chaos Strikes Back* was too difficult to map. Think carefully about the elements you use to build up the map and set rules for each element. I start with one element and build the map from there. The pressure pads for example can activate different commands: they could open a door, change a floor into a wall, or launch a fireball..

Don't let people into dead ends. If there's a problem which can't be solved, always give people a back entrance. For example, you could use a teleporter could and find yourself in an empty room and realise that you needed to bring a certain object with you if you wanted to carry on. So you're stuck, and that's wrong.

Pressure pads are good. They're simple but you can do complex things with them; have four ways of activating a pressure pad for example. Or you could place heavy enough objects on the pressure pad to activate it. The object could hold the pressure pad down, which could become a puzzle in itself. Finally, you could activate it with a specific object – a key if you like.

If you're using weapons, think of other uses for them - or have objects which aren't weapons but could be used like them. The same with food – think of new ways of getting it. You could get it from killing a monster, which could even be poisonous, but you'd obviously need a spell to cure yourself afterwards."

Interacting with doors is something that's always piddled us off with RPGs. Like. *Eye Of The Beholder* tried to copy *Dungeon Master*, but they missed out all the good bits. In *Eye Of The Beholder* you can't shut a door on a monster in the doorway, and you end up spending too much time running away. You can't go wrong with *Dungeon Master* as a reference source. It took two years to design and it shows. But whatever you take from it, try and improve upon it."

Let your imagination run riot. Look at everyday things for inspiration and make them fit the plot. I try not to copy anything directly, but I like new things or improving on existing stuff. Experiment and put what you like in, so long as it's fun.

Coming ►►►Attractions

WORK IN PROGRESS

The 1991 cinema smash will come Home in 1992.

"The family comedy without the family," *Home Alone*, will be opening on an Amiga near you soon. Based on the monstrously successful film from Capstone Pictures, Accolade hope to capture the humour of the situation. An eight-year-old has to try and keep two inept burglars at bay until his parents return. You should be able to stay home at alone and play in early February.

Roger Rabbit makes his return to the Amiga in Hare Raising Havoc, courtesy of Infogrames new deal.

Infogrames have captured the coveted Disney licence and are opening with a series of educational aids like *Mickey's ABCs and 123s*. Leading the push on the entertainment side will be a new Roger Rabbit game *Hare Raising Havoc*. All the new Disney titles will be released sequentially during 1992.

So I bung the ball and you hit it! England gets ready for the World Cup.

More cricket frolics are on the way in time, hopefully, for the World Cup (yes there's another sporting World Cup) from Soundware, the folks who put out this summer's *International Cricket*. It's currently called *Official World Cup Cricket* but that may change if certain player endorsement negotiations go as planned. Borderline stuff: more as it happens!

Team Yankee II is on track for release in mid-1992. It's set in the Pacific and is a World War III tank bash that will have the same balance of strategic planning and upfront shooting that it did the first time around. *Team Yankee* is one of Empire's most successful games ever and the follow up looks potentially as good.

Elvira II – The Jaws of Cerberus
Publisher **Accolade** Release **February 1992**

Elvira has gone missing and a 60 foot tall, three-headed dog, standing in the middle of Black Widow Film Studios might have something to do with it! Not only this, but a ghostly image of Elvira is hanging around telling you she's been kidnapped – but that looks a bit suspect too. This sets the scene for a bone-chilling trek into a shock-horror land of giant spiders' webs, misty graveyards and deserted Victorian mansions. And waiting for would-be rescuers to explore are three film sets.

The original *Elvira* won the 'Role-Playing Game of the Year' award in the States, but the creators of this gruesomely Gothic game aren't about to rest on their laurels. They've stripped down the game's system, tightened up the best bits and radically redesigned everything else, to ensure that *Elvira II* is superior in every respect. More special effects have been added, the point-and-click interface has been radically reworked and the magic system has been revamped.

"An experience synonymous with a first class horror movie," is how Mark Wallace, producer of *Elvira II*, describes the game. From what's available so far it looks like he could well be right, but with you doing the dying and screaming. If the plan comes together, then maybe we'll find out just why semi-clad people go into unlit rooms filled with nutters, why no one ever leaves the house when the blood starts dripping from the ceiling and why ordinary folk think that they can defeat a rather large, three-headed dog with an attitude problem.

Black Crypt
Publisher **Electronic Arts** Release **February 1992**

Sixty-four colour half-brite mode games are a rare breed, but that's not only what makes *Black Crypt* special. It's a 12 dungeon romp that promises everything you'd expect from a first-person perspective adventure game – keys, traps, monsters etc – plus a fistful of brand new slants on the established formula. There's one underwater level, a Medusa area to explore and the monsters can learn spells too!

Cavitas
Publisher **Nite Time Games**
Release **January 1992**

First outings can be very tense affairs, but Nite Time should have few worries with their debut game title *Cavitas*. It's basically a shoot-em-up adventure game where you sail around a series of caverns, in search of vital components for your mothership. It promises to be an impressive debut with HAM and half-brite modes (what was that about them being rare?) being used to beef-up each of the six levels that consist of 100 screens.

Fireforce
Publisher **Electronic Zoo**
Release **Imminent**

Forget art, let's fight! *Green Beret* did it well, now *Fireforce* wants to take the mantle of the top sideways scrolling shoot out. Controlling a muscle-bound GI type, you have to dodge the bullets and keep healthy, as progress is made through each fire-zone. You want to ban the AK? *Fireforce* has got 10 of them stashed away and a case of hand grenades!

The Godfather
Publisher **US Gold**
Release **January 1992**

At last the game of the second best film ever made is almost ready. *The Godfather* games have been divided into an Indiana Jones style, with both an arcade and a full blown adventure on the way. The arcade adventure is a non-stop shooting match, plus a recreation of the scenes that made the films X-rated. Gloriously moody graphics set a 1940s tone, but the gameplay will be state-of-the-art shooting action.

Might and Magic III
Publisher **US Gold**
Release **Early 1992**

Role playing dungeon romps traditionally have had a fixation with the number four, but that is all about to change because *Might and Magic* doubles up to let you have a party of eight! That's not all it has though, to allow it to stand up and be counted because supporting the game are a series of cinematic sequences to add a movie-like look and feel.

Eye of the Beholder II
Publisher **US Gold**
Release **January 1992**

The stunning success of *Eye of the Beholder* has set the sequel wheels rolling. Version *II* promises to be bigger, tougher and an altogether tidier hack-and-bash spectacular. With *EOTB's* reputation, more involved gameplay and *Advanced Dungeons & Dragons* 2nd Edition rules it's set to make major noise.

Indiana Jones and the Fate of Atlantis
Publisher **US Gold**
Release **Late February 1992**

The man in the hat is back and there isn't even a movie! Written and designed by top Hollywood script writer Hal Barwood it promises to keep the epic feel. With the Holy Grail and Ark of the Covenant already in the bag, Atlantis is all the Lucasfilm team have left to shoot for. They seem to have gone for real style, judging by the PC demos.

Turning big movies into big games must cause massive, but pleasant, headaches for developers. So it looks like Ocean must be suffering a real migraine because they have to turn *The Addams Family* into a big game. The film's had great critical reception Stateside, but turning the verbal comedy and visual slapstick into a playable program could prove tough. The word is that it won't be the usual platform romp but an arcade adventure. Spooky!

Another movie biggie Ocean have signed up is *Hook*, the Spielberg interpretation of the *Peter Pan* story. The film stars Mr Robin 'Good Morning Never Never Land' Williams. Nothing much is being said about what format the game will take, but then little is known about the movie so far either!

I love the smell of Napalm in the morning it smells of... well a 1992-quality chopper shoot out called Apocalypse.

Image Works have a movie tie-in, of sorts, on the way, with *Apocalypse*. Based on a tooled-up helicopter (*now*, I wonder why they called it *Apocalypse*? The best film ever!) that has to fly *Choplifter*-style missions. The action will focus on trashing the enemy and then landing in hot LZs to pick up your troops. The graphics are excellent and its gameplay should be spiffy, if it follows *Choplifter* school, which was just straight ahead blasting fun!

Graftgold show out with their new cutesy Fire and Ice. But can it be as good as their classic platform romp Rainbow Islands?

Another game currently in progress is Image Works' *Fire and Ice*, a cutesy platform romp that takes Graftgold (*Realms, Paradroid*) back to their *Rainbow Island* roots. All platforms and ladders, you'll control a blue dog who has to overcome the demons of fire and ice. The title sets the scene, as the poor lickle pooch has to outwit fiery bad guys in an Arctic landscape. With the team's cutesy pedigree and the daft plot, Fire and Ice has a real chance of bringing fiendishly new gameplay tricks to this evergreen genre.

GAMES UPDATE

Red Baron – Sierra: Still on the runway.
Wrestlemania – Ocean: One-ah, two-ah...
Elvira the Arcade – Flair: Still adjusting her make-up.

Photoscape in full effect. The light from the torches only shows a little part of the room, which adds tension and an element of danger to the proceedings. What lays ahead. If you're nervous then throw a torch ahead to illuminate the dank dungeon. But be warned that torches burn out, so use them cautiously.

trap-filled dungeon in the dark. There's no constant illumination and this drives adventurers, even in the early stages, deep into the dungeon to find more light. Torches provide a circle of light around the carrier, but have the tendency to burn down. As the torch withers, so does the light it casts. And you'd better find another quickly or you won't know whether that black silhouette ahead is a treasure filled chest or a deadly pit.

Using a process now titled Photoscape, the power of each lightsource is assessed and represented in concentric circles in brightness. The lack of light forces the speed of play and supplies an immediate motive. Nervous parties can even throw torches ahead to illuminate unexplored areas of the complex. The effect is impressive, adding 'realism' and gameplay.

Shadowlands

Publisher **Domark** Release **February 1992**

One-player style role-playing games have always been plagued by the 'party' problem of conglomerate adventuring groups. Teque think they've found the solution hiding in the shadows.

Shadowlands gives (and occasionally forces) teams to split up. Then both have to be controlled simultaneously. Tricky or what?

Graphically, Shadowlands should mix prettiness and practicality. Its refined icon system looks good but works efficiently. The intuitive basis of its design is clear and even under duress there's little chance of confusion. On the ground the drawbacks of isometric 3D are swiftly dispatched. When characters go near objects that could obscure them from view, then the graphic is changed from solid one into an outline. The solution may smack of expedience as it continually impairs the visual myth, but any decision that favours gameplay over graphics has to be applauded.

Face-to-face with the Shadowlands team. You can choose a character look that suits your own designs. While their faces are just cosmetic to the gameplay their vital statistics are not. Here you get the chance to generate a squad who are particularly strong in the areas you feel you'll need to beat the bad guys back.

Streets of Format Gold?

The preview of Shadowlands feels right, even when it's played at these early stages, and there's more of its tale yet to tell: the four different styles of dungeon, the subtle shift away from combat towards intricate puzzles, the scroll based magic system and the world's energy system that allows items to be recharged in an entropy trade off. Teque's adventure will begin this February, and that's when Screenplay's review party will hurl a torch deep into the dark dungeon corridors to see if Shadowland's streets really are paved with Format Gold. AF

Necessity is the mother of inventories. Good back-pack work is needed to cram all the adventurer's kit into their smallish backpacks. It is easily accessed and it is the game's only sub-screen, so the game plays along with few interruptions.

If you play *Dungeon Master*, *Chaos Strikes Back* or *Eye of the Beholder* the role-playing potential is limited because of the first-person perspective that these games use. The problem is characters cannot act independently, they can only act as a group. For deeper role play, with individually active party members you have to travel to the Shadowlands. The development team, Teque, have been crafting this fantasy world for a year and it's an isometric land filled with previously unthinkable role-playing possibilities.

Shadowlands puts a and different perspective on dungeoneering. For starters everything is seen from an isometric perspective – nothing new there, *Shadow Sorcerer* used it – but it is how the game utilises this view that liberates the character play. Although you are always part of a four man team in objective, all of the characters can operate in separate locations simultaneously. When united together they can be commanded to move as a

group – in the formation you chose – to speed play along, but they can also work alone. And it's here that it reveals its massive potential.

Virtually every puzzle or problem in *Shadowlands* stresses individual action. For example, a forcibly split party may well be able to see each other across a chasm but they are unable to unite. The keys that release them can be easily found, one on either side of the pits, but each key's on the wrong side. Individual members must then find a key and hurl it across the chasm to their fellows. Even in this simple example, it's easy to see the devious route the game could take.

Have you seen the Photoscape light?

The logistical problems of individuals wandering the halls and corridors are added to the gameplay mix by way of light. If the team's split, then each separate group must have a lightsource or they'll be stumbling around the

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Players can be left for the computer to control as play specifies, or they can be waggled about by your joystick commands.

American football Madden style. What makes JM's grid iron sim so special is the way it really brings the sport to life. When passing the quarterbacks are shown their three potential receivers as they try to escape their defenders. Like the real thing JM's is a game of patience, luck and observation.

J ohn Madden is big in the world of American Football. As a player he was a star. As a coach he took the Oakland Raiders to Superbowl victory. As a TV commentator he's the official voice of Gridiron to millions of Americans. As a Sega game, his name has endorsed the biggest-selling US cartridge ever. It wasn't Madden's name that sold the American Football sim however, but the quality gameplay it borrowed from the States' toughest sport.

Other games have tried to simulate Gridiron, the most notable of these being Cinemaware's *TV Sports Football*. Even this good-looking bash however, didn't deliver the tactical depth that makes the sport a powerful meeting of brains and brawn. Now on the Amiga, *John Madden* looks set to tackle football's gameplay potential onto disk.

Just win baby

American football is a sport about territorial advantage. Players have four consecutive attempts (downs) in which to either throw or run the ball forward for a total of 10 yards. To achieve (or if you're defending stop) the 10 yard advance, teams use a mix of skill, brute force and deceit. On each 'down' one specific play will be tried – either a run or forward pass – to gain the yardage. These plays are designed to fool the opposition into setting out their defence inappropriately for the offensive move being attempted. The defence have to guess the next play and line up to stifle it.

John Madden Football brings this level of tactical power, bluff calling and skilled moves to bear. As either defence or offense you are offered a range of set-up options. These can be scrolled through with the joystick and any style of play can be called. When the layout is chosen, then the play from it can then be selected. Once again a scrolling list of options is offered, with three on screen at any one time. To choose play you just flick your joystick, although it is never visually confirmed. If you're in the two-player mode this means

John Madden Football

Publisher **Electronic Arts**
Release **February 1992**

John Madden is a phenomenon to American football fans, and Sega games players. Now it's 'first down and 10' for the Amiga...

You select the play by cycling through the list with your joystick. Even when you've picked one though, it's never shown, so that it's kept secret by friends who you happen to be playing against.

your chosen play remains a secret until the ball is snapped at the line of scrimmage.

Madden is no mere tactical sim though, it brings joystick skill and timing to the game. As the play starts three windows open up, each showing a different receiver who tries to get into position to catch the ball. As the ball flies the receivers can be made to dive for a catch or show a turn of speed once they've caught it. Running plays can either be left to the Amiga or you can step in to help ball carriers avoid an incoming tackle. Defenders can be guided through the opposition line to tackle key players. The plays can even be changed once the lines have been set up (Audible) – helpful if you think the defence have guessed correctly.

A good read

The 'play' books of the teams, like their real world counterparts, are huge. Each one has a specific use and look, it's recognising (reading) the other team's play that makes you good at *Football*. And that's what makes it an ideal

computer sport, a mix of quick thinking, ad libbed tactics and pure ability.

Red '92

This accurate blend of American football's many aspects has ensured *Madden's* success on the Sega, but the Amiga version won't just be a conversion of a year-old-game. At the time of coding on the Amiga game a second, and improved, version for the Sega entitled *Madden '92* is being developed. Many of the new features from the '92 variety has been incorporated into the Amiga variant. For example games can now be played on four different surfaces – grass, snow, astroturf and covered stadium – all of which will have repercussions on the playbook.

All the stats from the NFL 1991 season will be in the game too, so a team's abilities will vary with their performance last year. And if the schedule goes to plan the game will be finished in time for the Superbowl, allowing Amiga American footballers to test out the two teams fighting for the World Title. **AF**

Flash 80 Jerry Rice scores a TD! No US football sim would be complete without a few gratuitous end zone celebrations.

The 49ers try for a field goal against the Broncos. All the NFL teams will be represented in John Madden's Football this Feb.

Delphine's flat polygon graphics looked good in Cruise for a Corpse, but they achieved little. Now they show what they can really achieve!

F rench graphic adventure experts Delphine, made their name with *Future Wars*, *Operation Stealth* and *Cruise for a Corpse*. Now, using their revolutionary polygon graphics system, they've produced an arcade adventure the like of which has never been seen before. *Another World* is a cinematic place, flat in tone, but rich in animation. It is a world that requires continuous acts of bravery and daring to survive. It's a world full of strange, deadly creatures that have no concept of mercy.

The Quatermass Experiment

Tricky blighters, particle accelerators. One minute you're in front of the world's whizziest computer, controlling an experiment that would have made Quatermass happy and the next you've been transported to an alien world. And as Lester K Chaykin's guide you have to usher him through the ceaseless maze of dangers that make up *Another World*.

At the end of the intro you're thrown in at the deep end. The desk Lester was sitting at when everything went weird, suddenly materialises in a dark lake. You have to wrench the joystick upwards and guide the confused scientist to the surface. *Another World* doesn't pull its punches, from the very first screen to the very last, Lester's life is under threat.

Let Lester swim too long in the lake and you'll realise just how hostile *Another World* is. If he doesn't drown first then tentacles snake out from the lake bed searching for their lunch! Swim slowly to the surface and they follow, forcing you to flee the screen.

Out of the frying pan and into the fire! Running takes you into leeches that can kill with a single bite. Stamp all of these to death and a mountain lion on steroids muscles in. Its glaring white fangs and roar shows that it too is hungry and that it sees you as the day's main meal. That's the pace of Another World, every screen poses a threat, each and very move could be your last.

Lester escapes into the middle of a civil war, not good news! Using the chaos as cover he must make a break for freedom. Making it out alive is a tough test, but it can be done. There are no grand ideas in Another World, no princesses to save, no causes to support, just the admirable aim of trying to keep yourself alive.

Lester finds a fallen guard's gun which proves to be one of his primary tools in his bid for freedom. When it's charged up properly the gun can shoot small beams, throw up a shield and also deliver a huge energy blast. Trouble is that it runs down rather fast and so you'll need to find somewhere that offers a re-charge.

Another

The land that time forgot

Lester is soon captured and imprisoned by one of the local alien tribes. The game begins in earnest as a rival tribe of aliens mount an attack. Amid the chaos and carnage you have to find a way to get Lester out of the prison and then out of danger. From here on in every screen sets a dexterity test or mental puzzle for

you to beat. Walls have to be broken open, chasms must be jumped, gunfights survived and friendships formed if Lester is to live.

Another World is not restricted to one style of play. First and foremost in the game's hierarchy comes dexterity tests. The polygon sprite moves slowly but precisely, and to make the most of the character's limited moves

Lester Chaykin is a nuclear scientist and the intro shows him arriving at the lab in his state-of-the-art sportscar. Prepare to enter, the Twilight Zone!

Still in intro mode, a freak bolt of lightning hits the particle accelerator. The combination of electricity and fusion throw him across time and space to...

...Another World. Into game time and the first thing you notice is that the world is a bit wet. Swimming in an upwards direction is advised, very quickly!

Another World looks and feels cinematic. At points in the game control is rested from you and a pre-set sequence kicks in. Here Lester gets an eyeful of the Alien city for the first time and it's jaw-dropping stuff. Most of the death sequences are also shown in this way. Very gruesome, but very good!

World

When these two factors combine, testing both joystick skill and game logic, then *Another World* is at its best. You've assessed the problem, worked out the solution, now it's case of putting the theory into pixel perfect practice.

The illustrated man

Arcade adventures that test these skills are not new, but ones which look this good are rare. The stunning presentation and unique graphic style grabs you the moment the first picture hits the screen, and then continues to amaze even when you thought the 'wow' factor could wow no more. The graphics are simply superb.

For *Another World* Delphine have used the same system as *Cruise for a Corpse*, only this time the characters really do come to life! There are no sprites, just flat polygons, and if anything, this radical approach provides a more realistic effect than any sprite system could hope. What other joystick game offers

It is the kind of game you want to show your Gran, because it has such a cinematic feel to it.

you four different views of the action: normal, cinemascope, vertical and high res?

Lester himself moves with the assurance and style of *Prince of Persia*. The polygon Lester doesn't have much detail to define him, but strangely this enhances the realism. His arms swing and he swaggers as he walks, Lester is a convincing hero. The enemies and monsters are not stereotypes either. There has been as much attention to motion lavished on them as the main star. Even background characters, who play no part in the game, turn and look when a fight breaks out. The result is animations that look real, are occasionally funny, but frequently awe inspiring.

These graphics would stand proud in a silent world, but Delphine's disk efficient system frees up enough space for some serious music and samples. The lion's roar really sounds like he'd appreciate a meal! The laser beams whine in true *Star Wars* fashion. The aliens talk in *Blade Runner*esque 'city speak' and explosions have a futuristically percussive feel. Combined with sparse but eerie music, this takes *Another World* into the realms of the truly atmospheric.

The effects don't stop here though. At the beginning of each new load, or change of

Continued overleaf

Fire fight! Lester had better be in fine fighting form if he wants to flee the prison. Hordes of guards descend upon him the moment he breaks out. Sharp shooting is needed if he's to avoid being turned into a carbonised skeleton. These remains do make a neat cracking sound when they decay though!

(jump, walk, run, crouch and two kicks) a whole range of different pitfalls are used. Kicking the poisonous leeches to death requires a tight bout of crouching. Jumps to catch vines must be timed perfectly if you are to avoid the hungry lion, while properly placed footing is essential if you want to clear the chasms Lester comes across.

On the brainwork side, it doesn't make massive demands, just that you pay attention. It offers clues and training early on, with both the kit and the character. Later, though you're on your own. Only time and much experimentation will tell if you needed to waste a laser blast on that wall or whether your weapon's energy has been sapped by a red herring.

Once on dry land Lester views Another World. It looks safe enough apart from that huge hungry lion on the opposite hill. Still he's miles away, isn't he?
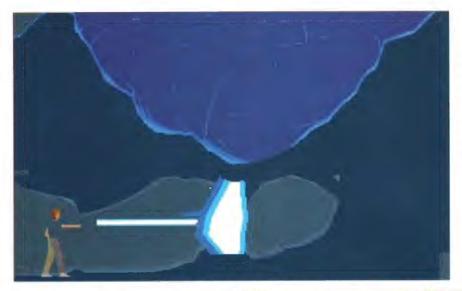
Yeeucch! Poisonous leeches! Kick them or die! One bite from these suckers is fatal so it pays to tread softly and carry a size 12 Doctor Marten boot!

Move to the next screen and the same nightmare! How hostile is this place. These leeches are easy to kill if a bit dangerous. Maybe this place isn't all bad.

Look what my gun can do! When used correctly the blaster can throw out high energy bolts that smashes everything, including that bit of rock which holds the entire lake in place. Maybe that wasn't such a bright idea after all. Any body out there into cave diving, cave surfing, breath holding?

perspective, control is surrendered to cinematic story sequences. These add to the game's mystery and magic, underlining it's cinematic feel. Delphine have spent two years developing the graphic system and it looks like it's been worth every second.

The pit and the pendulum

Delphine's polygon system has the potential to produce a stunning game. *Another World* almost makes it, but just falls short. The problem is the gameplay. At times it exhibits some exquisite timing-tests, while in others the only clue you get is death! And it is here it falters.

Lester, as the wild card in *Another World*, often triggers whole sequences of events; *Indiana Jones* or *Die Hard* style. While fleeing prison Lester has to flood a cave, while he's in it. Naturally this forces some rather nifty exit work on his behalf, leaping spike filled gaps as the subterranean tidal wave chases him down. You know the right moves, but the tight timing ups the stakes and the pressure. Can you do it? There's only one way to find out! This is *Another World* at its best.

At its worst *Another World* has distinct *Space Ace/Dragons Lair* overtones – great graphics but what was that you said about gameplay? There are instances, where only dying reveals a fatal trap. There's no clue, no chance to escape, just certain doom. *Another World* is structured fairly and offers a reasonable smattering of restart points, but when you have to visit them through no fault of your own, it is irritating as hell. Players deserve warnings, a chance to prevent disaster, not be lured inexorably to their doom.

Another World's perils range from the glorious to the pathetic. The timing and dexterity tests are supremely exciting moments, accompanied as they are by massively impressive effects. The unavoidable deaths are as unimpressive as they are annoying, ruining a game that deserves to be a classic.

When worlds collide

It does prove that Delphine have more to their game design arsenal than a few sly questions and a neat graphics system. This is a major league game – in places. The effects that run through the entire program are individual, bravely defiant of the sprite-based norm. The sounds that surround *Another World* add depth to the atmospheric power that the strange piccies provide. The animation is observant and convincing adding that 'real feel' to play.

The good work though is almost ruined by overly fatal elements which are unavoidable if you want to find out what happens at the end.

So you want to see your lawyer, eh, Earth punk! Well now you mention it. Lester wakes to find himself in gaol. Luckily there is a route of escape. Just contact the local Special Branch and they'll be right over with helpful hints, advice, guns...

And you want to see the end of the game, desperately! That's the problem, it's a game that you madly want to be free of the irritating gameplay problems it stubbornly poses. Yet, time and time again it slays you with no chance or choice, then dumps you back further than you wanted to go.

Another World is a major achievement. It brings Delphine to the fore as major developers in another field of design, it's the kind of game you want to show your Gran, (because it has such a cinematic feel even she'd understand it) and its the kind of game you really want to discover for yourself. The approach and results are unique. For all its glory *Another World* is still a game first, and it is here that it is sometimes found wanting. For the most part it excels, but it fails in a few key gameplay areas. It is worth buying, just for the power of the effects and the sweetness of its finer game moments. Be warned though, there are times when you'll really begin to hate the French.

Trenton Webb

Ahhh! Scrub the hostile comments, I rather think that Tiddles here would like a little more than a plate of milk to keep him happy! Nice Puss'cat...

Fearless to the last, Lester decides to go out on a limb to avoid this one. Safe for a while? Think again, that vine will break and you'll be back in big troub'.

A mysterious stranger shoots the lion dead. Time to get up, shake hands and take control of the situation. "Take me to your Leader! Uh, please? Sir?"

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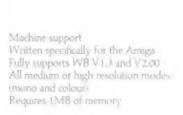
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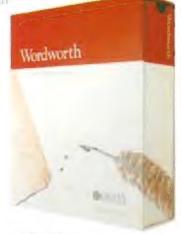
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No it isn't the Laker's chapter of the Hell's Angels coming on court to beat the crap out of the Bill and Ben formation basketball-and-dance team. It's a substitution. This means that the entire team (blue in this case) has to leave the pitch, er court, in order to console the outgoing player and pep-talk the new guy.

Tip Off

People have been waiting and waiting for Anco to pitch in with another sporting sim. The *Kick Off* series played, as they say, a blinder; so surely the next athletic action feast would be just as good? Elements from *Kick Off* and *Player Manager* are used in *Tip Off*. These include selecting a squad and altering each player's potential, overhead views, even the packaging looks the same. But somehow the gameplay just isn't there.

The game comes as two disks with several options to choose before you get into match play. The most irrelevant is the single-player practice. After loading a few times you are taken to a court where your absurdly long-armed, and solitary, player stands ready to sink a few baskets. It all looks very pleasant. He leaps, he bounds, he carries out complex overhead shots, he passes to no-one in particular, he even wanders out of vision (the only way you know he's still in the gym is by the thumpty-thump sound of the ball on the polished floor). The really strange thing about this screen is that it has nothing to do with the real gameplay. No where in the rest of *Tip Off* do you get the chance to use these skills. You can view this in two ways: it's a pleasant freebie, or it's a waste of disk space.

Harlem

Onto the real thing. You get to manage and then play with a team of pro-basket chappies. The management side entails creating a squad and assigning each player a number of attributes from a pool of points. There are 350 points to begin with and these have to be split between attributes and skills such as dribbling ability, passing, shooting, pace, jumping, stealing and stamina. Once you have set up your team you get to pick the first stringers and the subs. Then it's on into battle.

Oh dear. Yes the overhead is there, yes there is plenty of motion, and yes some of the players will even take their shorts off and moon at you. But really, could you be bothered to actually finish a game of four quarters where you can't actually tackle anyone. Gaining and re-gaining the ball is a matter of luck, you can score from the half-way line and miss from the shooting zone? Maybe it's something to do with the lack of basketball culture in Britain

Crikey, the aim of the practice is to hone your skills and possibly even get your physical coordination into some sense of order. A good start is to look in the right direction, you great tall string of player.

Make sure you set your teams up with care and attention. This means sorting out set-plays early on. The happy little faces at the top of the screen are supposed to denote your team.

OK, these are the options guys. Remember, this game is about guts, determination and choosing the right colour for your vest. I would still defy anyone to sit through the demo game, let alone play a real one.

(yes I know Crystal Palace and Kingston are fab – they also have a large American staff) but there just does not seem to be the same excitement and feeling of participation that you would expect from a good sporting sim.

The figures are just too small, and too weedy to get any real edge on, the joystick controls are so finicky to master that you end up by pointing your player in roughly the right direction and pressing fire in the vain hope that the ball will go somewhere interesting. You can't even commit a personal foul deliberately to relieve the tedium.

Globetrotters

Aside from the gameplay or lack of it, *Tip Off* is weighty with extraneous options. You can play in International, County, Youth, National,

Club, and Club classes. The number of points in your attribute pool affects your choice here.

There are a multitude of controls to get used to. These range from straightforward dribbling, through to slamdunking (make sure you've got a tall player otherwise this turns into slamflunking) and the Bounce pass. The problem is that while playing you don't have time to use any of them. I also defy anyone to come up with an affordable joystick that can cope with the differences between the controls.

Sadly, *Tip Off* lacks atmosphere, finesse of gameplay and participatory flare which would have made it a must of a game for sporting fans. It does try, the sheer number of options vouch for this. But at the end of the day you have to call a time-out and go and do something else instead. Shame!

Tim Smith ☺

Tip Off
Anco ■ £25.99

● Nice idea. Basketball is an adrenal sport when done properly.

● Horrible realisation. The gameplay is just too finicky and boring to carry on with.

● Loads of options to choose from. These range from team selection to practice.

● Crap sound effects. A bouncing ball and some crowd cries are about it.

● Small and weedy players who are difficult to control and who do not react quickly enough the your desires.

AMIGA FORMAT Verdict 50%

Oh dear! That poor Builder's about to bash his head and fall into the writhing mass of tentacles below. Maybe a quick rethink in strategy is needed on this level!

Oh No! More Lemmings

There can't be many Amiga owners that don't know about the *Lemming* phenomenon. At *Amiga Format* we first heard of them when Psygnosis approached us about putting a demo of their latest puzzle game on the Christmas Coverdisk in 1990. We thought nothing of it until the demo finally arrived, at which point all of the team were instantly hooked! No arcade licence, no film tie-in and no TV cartoon characters were involved, but it went straight to the top of the software charts.

History repeated itself when we were putting together last month's special Christmas issue. We were pleased to find that we were to carry another *Lemmings* demo, this time a specially constructed set of four festive levels. Sure enough, we were all wasting too much time playing this one as well! But what was the reason behind this silly little demo? Well, DMA Design have put together another 100 levels to challenge *Lemmings* fans on a data disk at the low price of £19.99, with a stand alone version available for £25.99.
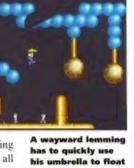
Let's Go!

The first major difference (apart from the loading screen) is the new level names. Instead of the usual four sets of Fun, Tricky, Taxing and Mayhem levels, the 100 new screens are split into five groups of 20 with the names Tame,

A wayward lemming has to quickly use his umbrella to float safely to the floor. Pity he didn't look where he was going in the first place.

Crazy, Wild, Wicked and Havoc. On loading the levels it doesn't take long to notice that all the scenery graphics and tunes have been changed. The general style is similar on many of the screens, involving red-brick towers and metallic obstacles, but some of the new scenery is very different. There are, for example, rocky caves with writhing patches of weeds, snowy scenes complete with Swiss-chalet shaped exits and surreal landscapes with mounds of bubble-shaped obstacles to overcome. The music has been improved quite a bit, sounding just as wacky and jolly as ever, but with a more cleanly-produced feel. Well... apart from the one that sounds like the theme tune to the TV show *Record Breakers*!

Oh No! More Lemmings is primarily geared towards giving established players

some more levels to have a go at, and the ensuing puzzles are extremely hard – in fact at times they are ridiculously hard! If the data disk has been aimed at the experienced *Lemmings* player, then how come the first 20 screens are so easy? Anyone who is worth their lemming-saving salt would be able to do this batch in their sleep!

As soon as the game shifts to the Crazy level things start to get very hard indeed. However, by persevering with the Crazy levels (and being a tad lucky) they can be completed... eventually!
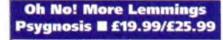
Oh No!

Working up to the higher levels introduces another problem. The puzzles on the original game had been carefully worked out and tested. But some of the screens on the data disk are so difficult, they give the impression that some of them were completed in a hurry, probably trying to beat the Christmas deadline. This level of complexity unfortunately emphasises some of the game's quirks.

If you dig down a column with a rounded top, then a small overhang is left – even though you were standing right on top of it. It is also possible to get lemmings stuck in the walls when they turn around on bridges, which makes some levels a pain. And think how frustrating it is when you place a Blocker on a hill only to see the other lemmings walk past because both his feet aren't on the ground!

DMA have tried to make the new screens devilishly difficult (apart from the ridiculously easy Tame levels), and this steep difficulty curve coupled with the annoying quibbles make *Oh No! More Lemmings* a less interesting prospect than it could be.

Maff Evans ⊘

Just a short way to the exit, but that tower still needs to be traversed before the lemmings can escape and get back into the warm.

T reguard is a very nice man, a very, very nice man. He always pops up just when you need him, to offer, friendly but cryptic advice in ITV's *Knightmare*. Now he's changed the format to help game-playing mortals who fancy a crack at the second computer interpretation of this successful TV show. His help is needed, badly. The game is designed around the *Captive* adventure system and has cracking credentials, uniting an excellent licence with a proven code. The result is strong, but once past the titles it has suspiciously little to do with the TV programme.

Captive audience?

Captive players will immediately feel in control of *Knightmare*. The system that drives the game essentially uses the same icon and keyboard commands as *Captive*, with improvements and tweaks where necessary. The four man team can be driven either by clicking on directional icons or keypad combinations. Clicking on anything with the left mouse button, gets or activates it, while the right is employed to initiate party actions. It's a simple system to learn, but offers enough flexibility to fill four huge dungeons with tests of precise control.

The four members of the Knightmare team all have different skills and specialities. Controlled from a cluster of icons they can be clothed, checked and changed to suit any strategy. They've an empty backpack in which to carry the kit they find and two hand 'slots' for those all important items – like weapons.

Unlike *Captive*, or any other first-person perspective role-playing game, the characters' hands in Knightmare don't just 'use' an object when you click them into action. First of all a click brings up a menu of all the actions possible with that object: knives, for example, offer stab, swing and hack. These can be preset so no delay is encountered when it's required. And it's not big or clever to start fiddling about with menus when there's a 10-foot hobgoblin trying to rip out your spleen.

Even the magic system is driven in this way, neatly sidestepping the need for a submenu screen. All spells must come from wands and their menus get larger as the wizard's skills improve. Different wands become available progressively, offering you the chance to cast wilder magic and the designer to ensure magic's restricted where necessary. Just like weapons, selected spells can be preset. So all you have to watch when 'it' hits the fan is your wizard's remaining magic points.

Knightmare gets serious! Fighting from the relative safety of a boat the team have to take down the four elves in order to proceed. All their fighting actions have been preset – note the red flags on the players' control icons.

Knightmare

Character control is what *Knightmare* tests, and you have to be swift to survive. The keyboard/icon mix works well, with the left hand physically walking the team via the numeric keypad while the right guides the cursor to control actions. Mistakes mean death, so every action that you preset must be thoroughly thought through, or menu messes are

Step onto the cart and it races off. To stop it just jump. Which is easier, and less painfully, said than done. Still, at least they don't have problems with the wrong kind of leaves on the track!

guaranteed when the blood starts to flow. Use the system well however and foes are swiftly dispatched.

TV format

Evidence of the TV's influence is profuse, but superficial. The plot is true to the TV format, supplying you with foes and a motive for play. Treguard pops up as Oracles, to warn of danger or set your next goal. You're on a mission to scour the dungeons of Dunshelm for the Shield of Justice, Sword of Freedom, Cup of Life and Crown of Glory, while your major foes are the FrightKnight and Lord Fear.

These elements set the tone, they even dictate the look, but not the way it plays. It is finely tuned to test you at all times and stresses puzzles more than its predecessor: *Captive*. While wandering the wilderness area above the four dungeons you may be fooled into thinking this is the world of *Knightmare*. Enter the first tunnel though, and it becomes clear this is the domain of the programmer, not Treguard.

Hey! Opening the door reveals an Oracle and a switch. The Knightmare Oracle is the source of playing tips but often precedes danger. So be careful!
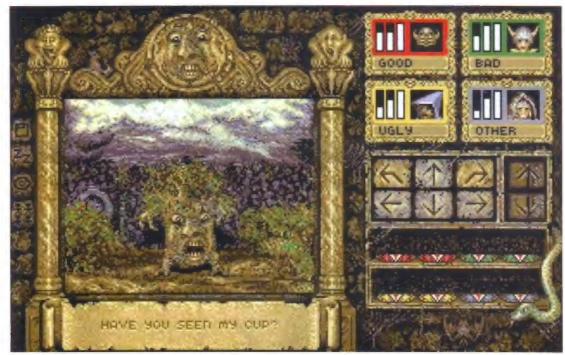
"Do not play with fire" is good but ambiguous advice. Odds on it has something to with an extremely painful way to die, but it could be a clue.

Checking out the switch shows it to be in the UP (off) position. I wonder what happens if you pull it. Unpulled switches are so tempting. Click, umm...

Have I seen you cup? I didn't even know you had a cup! In fact why am I talking to a tree anyway. Prepare to die! The four entrances to the dungeons are guarded by these Ent-like figures. Give them what they want to gain access.

The smash hit TV series makes its second appearence on the computer games scene. But can Tony Crowther's Captive game system make Knightmare the kind of game you lose sleep over?

Knightmare doesn't pull its punches, mistakes are punished ferociously. You start the game wandering three areas of wilderness and during this respite you're expected to master the game's controls. It isn't a threat-free area, but the hassles are sparse enough for you to become familiar enough with their functions and layout. The first quest you have to complete is unannounced but implicit – finding the dungeon you're supposed to explore!

Roaming through the hedgerows without a compass gets confusing. It's not difficult, especially if you map from the word go, but sudden action or changes of focus can leave you disorientated. The slowish pace at the start could also disillusion you before the main game gets a chance to show off!

Nightmare!

Once 'safely' entombed in the corridors of the dungeon, *Knightmare* goes into a higher gear. Monsters lurk around most corners to test mouse speed in combat, while the puzzles

Checking in the inventory, shows that you've recently topped a rabbit. When killed they turn into oven ready pies which help keep the stamina levels up.

begin to stretch your cerebral powers. The tunnels are an interconnecting maze. Locked doors restrict movement until the correct key or switch is found. They start as simple tests with the key for the next door hidden at the extremes of the currently accessible network. These evolve, with hidden switches introduced to ensure you're paying attention.

The pace of the game is forced by the creatures who lay in wait. These are intelligent and tough beasts who don't warm to becoming sword fodder. In a straight fight the result is never a certainty, with death a real possibility. Each has been placed to meet the party at a specific point in the game, so they match the party's power almost perfectly.

With no walk over opponents, each battle is plagued with doubt. Can your fighter take another hit? Should the last magic be used or saved? If you run, where do you run to? Your team should have a slight edge, if they are used with maximum efficiency. Make a mistake, or fail to recognise the power of a magic item and you're dead meat! There are few straight-up fights and you're warned but outnumbered. So a tactical approach is needed if you're to win through with a full team.

Knightmare's gameplay teeters on unplayably tough. Importantly though, it never falls. As each encounter has been precisely weighed you must match that precision to win. One slip during battle, one tactical oversight or missed hidden switch will prove fatal. However, the frustration of failure and the danger of combat only heighten the feeling of satisfaction when a tough beast is beaten.

Team spirit

Knightmare has a frustrating but compulsive edge. Despite spending half of any game cursing at its relentless aggression, *Knightmare* does have strange compulsion. Despite its ability to totally destroy your team and their hopes time after time, you still find yourself coming back for another go.
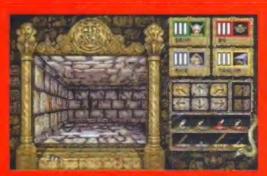
The game doesn't help its cause though, with its unfriendly save system. It's easy enough to save a party and position at any time in the game, it's the loading that's a problem. *Knightmare* has been deliberately designed to discourage liberal use of save and load. Within the game you can only load a saved game initially after booting or if the party dies. In this way it was hoped to force a more careful style of adventuring. However admirable this first sounds as gameplay theory, in practice it soon grows into an irritating a chore.

If one battle causes enough damage to kill one of your characters and leaves everybody else shattered, it's annoying. It's also fair to assume that the next fight will be even harder. The choice of whether to load up a saved game or plough on should be yours; whether to 'cheat' or not. The safeguard isn't even strong

Continued overleaf

A swift step back saves the team from a fireball whacking them in the back of the neck. These early Oracle hints may be obvious but, they do help.
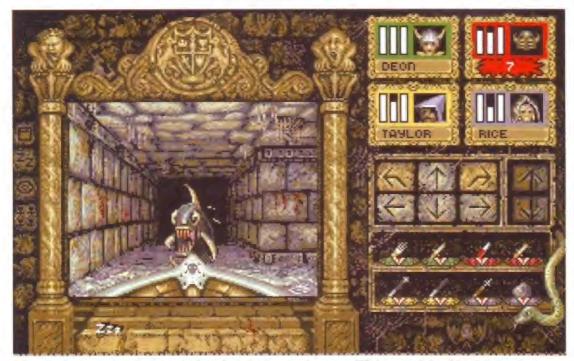
Later, a pressure pad perplexes the party. What does it do? Well there's one sure fire way to find out, it's a dodgy gambit but should make things lively.

Ooops! The room's end wall disappears to reveal four very annoyed goblins. Maybe that wasn't a smart move after all! Time to fight. Time to die!

Boats may look safe, but there are sharks below. Careless parties can swiftly be overwhelmed by their ferocious attack. They can damage the boat too, and guess what, you can't swim! So get the swords out and start hacking.

enough to work effectively, it just forces you to kill the remaining members of a team to access the load option.

Knightmare's other irritations are minor compared to the loading problem. The lack of a compass is less of a hindrance once the party go underground, but it still causes occasional moments of complete confusion. Experienced adventurers should have no problem here, but folk who aren't veterans when they first play have to become one real quick or give up.

The ability to choose specific actions other than merely 'use' can sometimes prove a blessing too. If teams are prepared and no slips occur during combat, it's a fast and effective system. One error or missed click, though, can imbalance the finely weighted combat and give monsters a fatal advantage. Accidentally calling up a menu and not an action is time consuming in a time-critical situation. Again the game theory is sound – reward the skillful player and punish the clumsy – but the penalty you have to pay for mistakes is high.

Hard but fair?

Knightmare plays fast and hard. As dungeon romps go, few can match it for the continuous ferocity of its assault on your party's lives. Each encounter is tailored to suit your team's status, so the game runs in a state of perpetual

high tension. Success in this environment really feels like an achievement, but failure is both frustrating and far more common.

An element of frustration can drive players on to try again or rethink their current tactics. It can focus the thinking and hone the player's style to suit the game system. Extreme levels of irritation however ruin games. *Knightmare* manages to stay the right side of the frustration line – just, but there are times when the account appears overdue.

What we have here is a precisely balanced game that requires maximum effort at all times. Every square of corridor must be checked on all sides at all times, each character

Character creation is limited but possible. Your starting skills don't limit you to weaponry and using new items earns extra abilities. This means that the skills you develop underground can be tailored to fit your tactics. If you need a second cleric then give someone else the cleric's wand.

must be watched to ensure that they are ready for unexpected combat. Every battle must be thoroughly prepared for, adapting proven tactics to suit current needs. All the puzzles and riddles that inform your quest must be analysed and solved.

In terms of a strict translation from TV show to computer game *Knightmare* is far from a convincing success. As a highly polished game in its own right it is a definite success. A finely balanced affair *Knightmare* continually pushes players harder and faster. It accelerates from a tough start to plain hard real fast, and that means that you need to either be a dungeon expert or a quick learner to stand a chance. The frustrating process of loading in saved games soon becomes a familiar one, highlighting the steep difficulty curve. But if you've patience and fancy a heavy duty underground bash then check out Knightmare. If you've a low frustration threshold then...

Trenton Webb

Knightmare
Mindscape ■ £25.99

● The load game feature is just deliberately annoying to use.

● Tense, finely balanced gameplay that demands maximum effort.

● Starts out hard then gets tougher!

● Graphically slick, fine detail is used to create both tests and atmosphere.

● A high octane dungeon bash with a few *Knightmare* flourishes.

AMIGA
Verdict 85%
FORMAT

Get down on the line and stick it to them! There are times when Knightmarers have to get busy. It'll be a tight ruck as these boys are pretty meaty.

The little devils were guarding a major item. The row boat allows full exploration of the sewer. Care is needed at sea though as the boat is fragile...

... and if you damage it too much it'll sink! Game Over time to reload that saver and get it right this time. Still, the swim was refreshing.

Look out - he's back!

PAPERBOY 2

No window is safe. No fence is too high. The paperboy is determined to deliver the paper to his subscribers any way he can. Tossing papers left and right, riding in three directions, jumping anything, this free-wheeling carrier visits more neighbourhoods and houses, faces more targets and obstacles, in more vivid colours than ever before.

Plus, rad stunt riding and BMX tracks in bonus rounds. Choose to ride as either Paperboy or Papergirl too!

MINDSCAPE
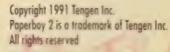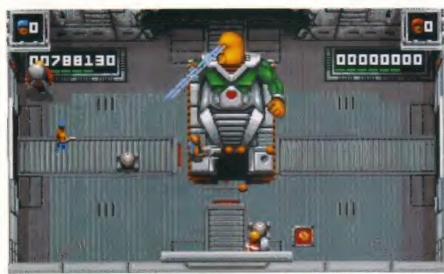
The end of the first arena and Mutoid man is having a bit of a strop. Blast him to bits before those deadly laser eyes and mighty tank tracks turn you into a hamburger.

Will those protective flares last long enough for you to get through the crowds and collect all that lovely loot? You hope so.

Smash TV

The theme of violent future sports is hardly a new one, after all *Rollerball* brought us visions of psychopaths in a high-tech arena as far back as 1975. More recently, films such as *The Running Man* (which in turn was a pale interpretation of the original book) have revitalised the interest in violent spectator sports, as well as introducing the idea of TV game shows that are played literally to the death.

High-power future sport games are also a well-visited theme as far as computer games are concerned. The most notable is Psygnosis' *Killing Game Show* and the Bitmap Brothers' *Speedball*. *Smash TV* tends to lean towards the game-show theme more than the sports view, being heavily inspired by *The Running Man*.

The special prize room gives you a chance to collect a lot of fabulous prizes, but look out for the mines that may lie hidden underneath them.

crowds of baseball-bat wielding thugs with one intention: to beat the living daylights out of you! In order to complete the round, you must destroy a set number of opponents. This allows one of the doors to open up, forming a linking tunnel to the next arena.

As you progress through the rounds, more vicious opponents start to make an appearance, including the explosive Mr Shrapnel and the bothersome UFO drones. However things are not quite as grim as they seem. Various tokens appear from time to time to give you extra powers, including speed-ups, grenade launchers, rockets and shields. Occasionally a prize will be thrown into the arena. The prizes are either in the form of packages – which

The end of arena two sees evil snakes trying to zap you. Quick! Collect the shield!

Didn't they do well?

The year is 1999. *The Generation Game* has long since been assigned to the archives as people cry out for more powerful and violent TV shows. There is one company however that has a show that pulls in bigger audience ratings than any other network program. *Smash TV* features big cash payouts, fabulous prizes and more blood and sweat than any other TV show in history.

The game is played by one or two contestants under the control of you and a friend. You are given a simple machine-gun and a rudimentary set of body armour. The lucky (?) contestants are thrown into a metallic arena with four doors. Through these doors emerge

Into the temple section, when all hell breaks loose. Snakes and robots don't exactly make it easy going!

correspond to prizes such as cars, holidays, VCRs and toasters – or as piles of cash which can be picked up to increase your bonus. Unfortunately, in order to collect your bonus you need to beat Mutoid Man, he waits at the end of the current maze and trundles out of a hole in the wall when you approach. To defeat him you need to blow the gunners from the tank base, blow off his arms and then zap his head. Gruesome – but the audience loves it.

The scores on the doors

The Amiga conversion of *Smash TV* loses a lot of the frantic feel of the coin-op. This is partly because the only way you can play with two joysticks is either wiht two Bugs or by gluing two sticks together on the table! This would be OK if a similar system to *Llamatron* (a game which, like *Smash TV*, was also born out of the ashes of the classic *Robotron*) had been used to allow you to fire in different directions, but in *Smash TV* you have to hit a key on the keyboard. This greatly disrupts the flow of the game, resulting in the loss of lives.

Another annoying point is the fact that the screen is a lot shorter than in the coin-op. This means that the wild feel of the original hasn't been carried across, since you haven't got the space to play with. The graphics and sound are a bit messy too, with some extremely garish colours and scratchy sound effects being used to portray the action.

If you've never played the coin-op, then the game may very well hold your interest for a very short while, but anyone who is expecting to play the hit arcade game on their Amiga will be disappointed, since the game lacks the substance and action that is required for a challenging shoot-em-up.

Maff Evans

Smash TV
Ocean ■ £25.99

● Fiddly control method makes the game feel very unlike the coin-op.

● The reduced playing area means that you lose the 'mad-panic-dash-and-shoot' feel.

● Scratchy sound and garish colours are not what we expect of Amiga games these days!

● Fun for a short while if you've never played the coin-op, but it will disappoint hardened shoot-em-up fans or *Smash TV* players.

Verdict 61%

MOONSTONE
A HARD DAYS KNIGHT

A320 A·I·R·B·U·S

...has landed.

developed in cooperation with

 Lufthansa and Deutsche Airbus

In pause mode the Caridaxx starship shows what it's got. After whupping the butt of a mid-level guardian it's into a section of level one and the wibbly wobbly snake-like alien who creeps around the edges of the world. You have to edge close to the side and blast like a maniac. The bad news is that the shooting is easy, moving slowly ain't.

Cardiaxx

C onsider the following piece of text and see whether you think you'd want to hear the rest of this gripping space drama: "The shuttle drifted towards Halfway with the grace of a pregnant duck. Strips of navigation lights winked blue and green along the sides of the craft as the pilot aimed the vessel towards the empty bay. The retros blasted briefly – soundless rockets firing into space, slowing the approach of the freighter".

Not exactly, awe-inspiring prose is it? That piece is from the beginning of the novella which Electronic Zoo have padded their manual out with. However, as bad as that cliche ridden story is, five minutes spent wading through its tetchy grammar is far preferable to the same amount of time spent playing their latest 'game' *Cardiaxx*.

You see, the Zoo have bunged a 'story' in their manual so that you don't need any instructions to play: the joystick moves your spaceship around and fire unleashes a bullet. Why gloss things up? *Cardiaxx* is a shoot-em-up not a prospective Pulitzer prize winner.

Would it win any prizes?

There's nothing more satisfying than sitting down for half-an-hour, with a well written blaster and destroying zillions of alien sprites. However, mindless blasting games, more than any other kind of computer game have got to be playable; rob them of this vital ingredient and what you've got is a waste of a perfectly good floppy disk.

It is essentially a *Defender* clone, *Caridaxx* could be up there with the best. You can't go far wrong with some swift direction changing, high fire-power, spaceship antics. Well it seems you can here.

This game verges on the unplayable. The craft you're meant to destroy alien ships with has the most frustrating inertia ever installed

This little devil sneaks in one side of the level and out of the other. You have to wait and blast him, but as there's a tight time limit on the game waiting ain't good news. Staying stationary is also tricky.

Swinging back to the beginning of level one and there's a whole swarm of little aliens waiting to be slaughtered. Caridaxx has some fatal flaws, which hinder gameplay progress.

on a ship. One tiny nudge of the joystick and your craft goes hurtling across the screen, straight through aliens, bouncing off walls and inevitably killing you. Tap the joystick in the other direction to reduce speed and you end up doing exactly the same only in the opposite direction. It is possible, with the lightest of nudges to move slowly, but these take so much concentration that you end up going slowly into the nearest wall.

To top it all, the aliens have been placed in the most difficult-to-hit places imaginable. Here it's like being dropped bott first into a cage of starving, rabid Pitbulls.

It can't be that bad.. can it?

From a technical point of view *Cardiaxx* is fine. The graphics are relatively colourful, the sound's chunky and it all scrolls around smoothly. The trouble is all these good aspects never gel together as a game. It's as if someone set out to design a smooth scrolling routine and as an afterthought decided to bung a few sprites in.

The level's are arranged so that you have to shoot entire attack waves to progress any further. The next attack wave might be to the left or right of your position and so you have to go over old ground. To aid you, a sampled voice instructs you that there are aliens to the left or the right and you thus travel in either direction where you shoot at said aliens.

After 10 minutes of this game you'll have had more than enough. The difficulty with the spaceship control is it ups the already considerable difficult to near unplayable levels. The disparate elements aren't brought together at any stage. The *Defender* style of gameplay *Caridaxx* tries to emulate never materialises. And much like the game itself, it feels just like the ship: you're going back and forth, getting nowhere, incredibly fast!

Andy Hutchinson ✍

Talking to other people is the only way to progress in the game. Close to the start you meet Von Schmelling, who is willing to sell you the German report on King Tut's tomb.

Space 1889

I magine that the Victorian era saw the first space exploration. Imagine also that late 19th century Britain, France, Belgium and Japan have established colonies on Mars and Venus. And finally, imagine that Thomas Edison was responsible. Still with me? You must have one hell of an imagination.

Space 1889 is a computer version of a paper-and-pencil role-playing game. The background is different to any other game – it's reminiscent of Jules Verne meets Edgar Rice Burroughs, complete with Martians, Selenites, Moonmen and Venusian dragons.

The first thing you do is invent some characters on a separate save-game floppy. These can have a variety of skills and backgrounds. The most limiting factor in a character's development is social status, hence the Victorian flavour of the game. The character design is easy enough. There are five different options, and you just work down them. You only control what a character turns out like in general terms, with the computer doing the legwork.

Once you have a party of five or less characters, the game begins. The plot starts relatively innocently during an exhibition to the British Museum in London. A team of German explorers have discovered the whereabouts of Tutankamen's tomb. You overhear and decide to fund an expedition of your own, together with some friends who club in with you (that is the character party you've just designed).

And that's it. The game starts with you having nothing but a pocket of cash (having a career as a master criminal helps enormously) and you have to get an expedition together. Once that quest is completed, others follow: to the moon, Mars and Venus – eventually.
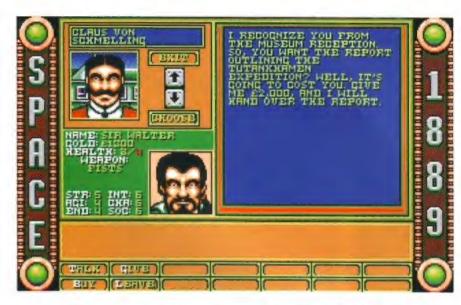
There's plenty of equipment to buy, information to obtain and people to meet before that happens. This is a good idea, as it gives you a chance to get used to icons and menu systems before the party gets into trouble.
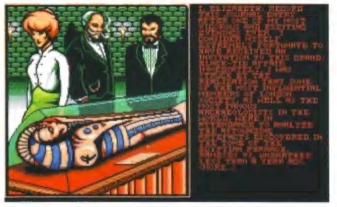
Window with a view

Most of the action takes place in a small view window, which gives an overhead look at the character's surroundings. Everything that appears in this view window looks awful – everything else looks pretty good.

Movement is easy but long winded. You put the mouse pointer where you want to go, and then click the button. Easy, except that moving around to any distance takes thousands of button clicks. It would be OK if the game worked fast enough to keep up, but most of the time you're waiting for the party just to

Important events in Space 1889 (like the exhibition where the game starts) treat you to a so-so picture and reams of explanatory text. The font used by the game isn't particularly readable, but it does help to build up the plot a little.

get from A to B.

The menuing systems are frustrating. It's very odd that a game will use the mouse for most things, and then insist that you use the cursor and the Return key for specifics (buying and selling items you find in the game are the worst culprits).

Another failing is that the design of the game lets you do virtually everything on one screen. There is nothing wrong with this, but the game gives you a variety of different options, couple this with the ever-present title, and you find the actual playing area looks

small and pathetic.

Walk like Egyptians

There plenty of places to go on planet Earth alone, with various modes of transport available. Everything is based on steam power with the exception of horses, which adds nicely to the atmosphere. It's very odd, though, walking from London to Egypt without ill effect. Even more weird is that it's very difficult once you've hired a steam ship or Zeppelin to actually land anywhere again, apart from the place that you hired it from.

Most of the game play is handled through simple interaction with the different characters you meet in the game. The combat system, is simple to use and fairly comprehensive on weapons covered and how they are used.

Most people though will be totally unmoved by *Space 1889*. The manual contains background information rather than playing guides, the protection system is a code sheet printed in black on midnight blue (unreadable) and playing it will bore you to tears. There might be a real game in there, but it will take days for you to unravel, and the tedium is too much for all but the most hardened role player. A great mythos, but not much fun.

Pat McDonald

Moving around the worlds is boring. Click where you want to go, and the screen shudders its way over to that point. A shame you can't show you that effect, but these graphics speak for themselves.

JANUARY ISSUE OUT NOW!

It's got two disks on it, it only costs £3.65, and it's quite simply *the* place to come if you're interested in Amiga games. And it gets better – the new Feb issue (£2.99) will be on the streets in a couple of weeks... time...

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TV

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0000

00000800

PUGGLES

...BIG PRIZE

Two-player action is the name of the game as Robo takes a death-slide from level three down to the second floor. Meanwhile, Mobo is hanging around out-side, waiting for Robo to land so they can embark on a pincer movement to the middle of the ground floor.

Bonanza Bros

I t's night time. You're wearing a catsuit and a balaclava helmet. You're in the house of a total stranger and you're about to do something decidedly morally unsound, not to mention highly illegal. Yes, you've joined the Bonanza Brothers for an evening of breaking-and-entering.

Except this time the law is fully aware of Badville's most notorious criminals' activities. The mayor has decided to clean up his town, and has hired Robo and Mobo to accumulate evidence from the offices of the 10 most corrupt businesses in town.

Double trouble

Bonanza Brothers is essentially a two-player game, and to be honest there's no real way that a one-player romp will realise half the potential that the game has to offer.

Each level is in a different building, and the object is to explore your surroundings, collect all of the pieces of evidence lying around (don't worry, you don't have to be Inspector Morse because all the collectable objects flash, successively blowing the gaff for the corrupt business that is being investigated) and then make your way to the exit.

But things aren't completely straightforward (surprise, surprise). The buildings are

At last, Robo's grabbed the final object and is hell-bent on smashing his way out of the building. The time for stealth and the softly-softly approach is long gone, as he dashes for the stairs to the roof for a rendezvous with his get-a-way airship

swarming with guards, and one whiff of a Bonanza Brother is enough to trigger swift retribution involving the business end of the guards' firearms. You can fire your stun-gun back, but all too many of the guards wear bullet-proof clothing, making head-on, charge of-the-light-brigade style manoeuvres highly impractical, not to say foolhardy.

Stealth and tactics: that's the key to success. This is also where the two-player option comes into its own. A map is displayed, illustrating Robo, Mobo, doors, stairs and all the remaining pieces of evidence and their locations. So take time to plan a two-pronged pincer-style attack, or divide the playing area into two and share the burden of exploration – either method offers more chance of success than simply bodging ahead on your own.

The buildings are divided into rooms by doors and stairs. Robo and Mobo can creep around in semi-3D (they walk to the 'back' of the screen to hide against walls or climb up and down screens) and open doors. Sandwiching a guard against a wall with the strategic and sudden opening of a door is displayed in Tom 'n' Jerry fashion, and provides an addition to the Bros weaponry. Creeping up on a room from both directions is usually the
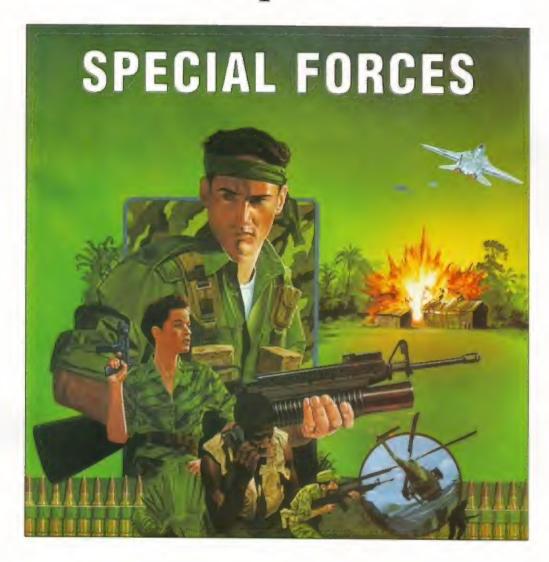
It's Mobo's turn to get stuck into the action while Robo hides in a corner. Unfortunately, the exclamation mark above the policeman's head indicates that he's spotted something – time to do a runner or shoot him first, quickly.

The Brothers are professionals you know, so take time out to survey each house before actually breaking and entering. They know the exact layout of each building, and the location of all the objects in advance.

only means of getting away unhurt, so plan the routes of you and your buddy in advance.

You'll like it, but not a lot

There's a time limit and empty drink cans and garden rakes are lying around (tread on either and you fall on your back, a sitting duck for any guards that happen to be around) and there are some strange characters (puppies and bizarre bearded bomb-chuckers) in an attempt to make your task even tougher. But that, my budding cat burglar, is your lot.

Ten buildings of increased complexity and tougher baddies aren't enough to keep you interested. The animation is blocky, with only a few imaginative touches and there's not enough two-player interaction to add depth to the game. If only there had been a bit more entertaining animation and a few more levels, then the *Bonanza Brothers* could have been a cracker, but as it is – there's not enough here.

Neil West

Bonanza Bros
US Gold ■ £25.99

● Simultaneous two-player option, but with no real interaction between the two heroes.

● Modicum of lateral thinking and strategy involved in the planning of your route.

● Mediocre graphics, with blocky scrolling and only few imaginative animated touches.

● Ten missions are not enough, more and bigger levels could have added extra depth.

Verdict **70%**

This is about two beefy-legged strides into the game, Hegor faces his first real opponents. These strange dragon creatures hover above the chest. Hegor can run off down those paths, but could he live with himself by never knowing, for sure, what the chest contained?

Barbarian II

ARCADE ADVENTURE

In a bid to add greater game-play to the sideways-scrolling beat- and shoot-em-ups, adventure overtones are often used. This involves players collecting specific objects and then using them in another area. This can take the form of keys, weapons or anything that suits the theme. Collect-em-ups also use maps more than linear scrolling fire/fist fights.

Tough luck Hegor, you just didn't make the grade. Luckily, there's a save game feature that dispenses with re-treading footsteps.

H egor's back for more. After he successfully did away with Necron, his evil brother, he comfortably settled down to a hero's existence of endless free beers down the pub, cheap plumbing and the occasional guest appearances on TV game shows (or whatever the barbarian's equivalent to that may be).

But one fateful day the previously reliable "Hey babe, I'm a superhero, I killed Necron and I could have been king," line failed to work on a girl. Evidently, Necron's evil minions have resurrected their master's body, and evil once more stalks the land. No-one likes a hero who leaves a job half-finished, so before you could say 'loincloth' the free beer dried up, his regular slot on TV's *Chicks 'n' Choppers* was given to 'Miss Damsel In Distress 670 BC' and he couldn't find a plumber for love nor money.

Hi ho, hi ho it's off to the forest Hegor goes

This made Hegor very angry, so without even bothering to pack his smalls (or even put a winter coat on) he set off into the dark forest once more hot on the trail of his sworn enemy. This is where you join in the proceedings, as Hegor appears on a woodland path somewhere in level one – the Forest. There are five other levels of action to explore and conquer, adding up to a BIG adventure.

Hegor can run either left or right along paths, with openings to adjoining paths, caves or buildings displayed in the foreground and background. The game immediately bears its teeth, as our hero's first taste of action soon swaggers onto screen. Baddies take numerous forms, relying on numbers as opposed to 'ardness to wear down our man's energy reserves. Kill a baddie, and it'll drop a bottle of potion. These can then be collected to enhance either your own stamina or the strength of any weapons you may have collected.

There are numerous armourments at Hegor's disposal (including swords, axes, crossbows and grappling hooks), but first he must find them – not easy. The game soon

settles into its stride, basically a collect-em-up set over a large area with baddies and traps to negotiate as you go. It's all fairly basic, but the action is fast (checked only by a small lag-time when Hegor takes a turn-off at a junction) and the beat-em-up sequences are well-animated and require a fair amount of skill. Hegor has a wide range of combat moves at his disposal, and there are definite techniques to be learned for dealing with particular baddies.

Interspersed throughout the game are opportunities to spend some of the cash you may have collected. Villages provide all sorts of goodies – not least the chance to gossip with a local, often yielding useful information. There's a save-game option enabling you to restart at higher levels (very useful; this is a big game) and a whole world full of friendly (and not so friendly) people to meet.

Deep into level two and yet more flying baddies. Hegor can carry a limited number of different weapons, then select which one to use at any moment. Either way, these dragons are still tough cookies to get rid of.

Now that was careless, but this doorway may lead somewhere useful. The only problem is, you may have missed something useful hidden in a chest on level one that will prove necessary later on.

Loincloths and bulging muscles

Barbarian II comes billed by Psygnosis as the 'ultimate in loincloth entertainment'. And even though this could be disputed by the big and bulging Chippendales, Adonis, et al – it does give you some indication as to the merest tinge of black humour you'll discover injected into this massive arcade adventure. If Hegor runs into a wall, he hurts his head – logical, accurate, but the first time I've ever seen it happen in this type of game.

The graphics are fairly basic, but everything moves smoothly across the screen – and it's especially good to see the beat-em-up element handled so well. All too often, games that encompass elements of fighting tend to fudge it – the action is usually far too brawlish requiring only an auto-fire button to see you through to the next levels – but *Barbarian II* has none of this.

In fact the only real criticism is that the game really is a little dated and rather basic, considering what is available currently on the market. But there's a big, slickly presented challenge here that fans of the original, or of the genre in general, will enjoy.

Neil West ⒶⒻ

Barbarian II
Psygnosis ■ £25.99

● BIG adventure with a save game option to ease your progress.

● Basic graphics, but smoothly animated with lots of character.

● Beat-em-up sequences that actually require some skill and tactics.

● Explore, collect objects, kill baddies and replenish energy – it's all been done innumerable times before and in 1992, comes across as decidedly dated.

AMIGA Verdict FORMAT 73%

The only major game from eastern Europe was the addictive Tetris. But this post-perestroika RPG enterprise could well be about to put its western counterparts to shame.

I t's refreshing to have preconceptions shattered, for first impressions to be wrong, to see prejudice overcome by fact. When *Abandoned Places* was first announced the omens seemed bad: Electronic Zoo had never published a full blooded RPG before and the programmers lived in Hungary, of all places. Yet, despite these portents of doom the finished game is refreshingly good.

Trials of life

A journey takes four resurrected heroes on an artefact trail. They have to track down the component parts of ancient weapons, find masters in the arts of war and magic, visit cities in search of clues and then take on the world's big nasty – who as you might imagine, is plotting to take over the place. The game is in three main sections: dungeon exploration, roaming the countryside and searching towns. Linked by sequential quests this is the world of *Abandoned Places* – which is a bit of a daft name as the towns are teeming with people.

The meat of the game is in the dungeons, castles and towers are explored in a *Dungeon Master* style. These are packed with monsters to kill, treasure to collect and artifacts to help for the showdown with the end-of-game bad guy. Twelve different graphic styles add variety, masses of monsters keep you on your toes and there are so many different dungeons littering the countryside it's a wonder the world doesn't subside into the sea.

Going underground

The underground exploration is solid stuff with a few extra frills thrown in to push the genre forward. The controls are clearly laid out with all information accessible on the main game screen. Spells, weapons and objects can all be used swiftly in combat, set off by a click of the mouse. Movement's are either driven by icon controls or some oddly placed – but easily learned – keyboard commands. You can control everything visible in the game window. Fighters can now push, pull or climb, as well as walking and hacking; while the effects of spells on the surrounding area have been spectacularly implemented.

Within a dungeon there are a few key goals. You enter each set of tunnels with a specific aim, a quest. This can take the form of a genocidal "kill all the monsters" or a more specific object location test. On top of this are the pressures of keeping your folks kicking, they need food and sleep like the rest of us! If you run low on munch, then the hit points start to fall, and if you become exhausted then magic points never regenerate quickly enough.

Abandoned Places is no mere dungeon bash: it's a wilderness adventure too! The game sets you the task of having to search for cities, towns, people and even having to explore the dungeons. It's not the most rivetting part of the game, but it fleshes out the scope of this fantasy world spectacular. The first wilderness problem you encounter is how to catch a boat off this little island and onto the main map!

Abandon

These firey folk look ferocious but should cause even unarmed adventurers few problems. One tip though, unless you've got a Fakir in the party, don't stand in the fire to fight them!

Surviving combat is a primary concern. The first few dungeons are easily beaten, with weak foes for you to sharpen your sword skills on. Later, the monsters get tougher and hit in larger groups. If that wasn't enough to keep any adventurer happy, then they have to start mapping. You have to know where you are, to know where you want to go and what hasn't been explored yet.

No RPG could hold its head up high without a spiffy intro. Abandoned Places has a long intro, in a highly distinct style. What's more it actually refers to the game and why you're killing dungeonloads of monsters.

The dungeons are the main focus but the inclusion of other sections beyond the cavern walls means it does not live or die by them. It allows the difficulty factor to increase slowly – maybe too slowly. The emphasis is on exploration, solving the puzzles and finding the keys, more than powering through by brute force.

Magic carpet ride

Exploration is the key to the world above the dungeons. You are never told directly where to go next, you have to visit towns and ask wise men for advice. They will give you a broad hint, or maybe even a diversionary quest, that gradually pieces together into an overall crusade against evil. As you traverse the countryside on horseback, on boat, on foot, or flying via magic, wandering monsters randomly attack, to make sure you're paying attention and maintain the game's pace.

The location of some dungeons is known, ie in the mountains above a certain town, but only footwork and scouting will reveal the exact entrance. Seen from afar with a party icon wandering the map, the wilderness is not deeply involved but is a considerable part of the game. If you can't find the right dungeon you're stuffed, if you miss a town (and the clue) further play is difficult. But it provides a neat change of pace from the 'in your face' dungeoneering and broadens the game.

Towns are not essentially part of the game, they are the one place you can't actually die. They do however provide the information, the training and the equipment that fuels the game. They provide a neat human edge to remind you, as a player, of what you're fighting to protect.

Abandoned Places is the first project for Electronic Zoo's east European adventure prodigies and it is an outstanding debut. It adds

Abandoned Places offers a more varied range of backdrops and monsters than your average RPG. In the first dungeon three types of wall are used and three different styles of monsters are faced. Some of the wall sections do cause problems though. The caves, as seen here, create problems because you can't see clearly enough to see if the corridor either carries on or turns.

ed Places

enough to the usual mix to achieve an identity separate from the games which inspired it: *Dungeon Master*, *Chaos Strikes Back* and *Eye of the Beholder*, and it improves on them in significant areas. The auto-map function, a reward for completing a difficult dungeon, is a significant bonus and gameplay improvement. The inclusion of an outer world and a broader plot give the game a sense of geographical solidity. As a game it works well, as a first project it's stunning.

The first project for Electronic Zoo's east European prodigies is an outstanding debut.

Abandoned Places isn't without its problems. The gentle opening pace helps players get to grips with both the game and the system. Yet the pace doesn't really start to increase until much later in the game. For beginners this should make it an ideal trainer, but for folks who've been round *Dungeon Master* twice, life may seem a little dull. The inclusion of the outside world helps the game trespass into different genres, but not enough is made of the problems of travelling to bring the advantage home. It's interesting but rarely exciting.

Not graphic enough

The range of graphic styles used is admirable in scope, but while certain wall sections look pretty they are hard to read. The cave areas are particularly bad; it's vital you know if the corridor continues or goes into a cross roads, but it's almost impossible to tell what shape the next 10 foot of wall will be. Once you're there

it's easy to check, but it's no fun exposing a weakened party to a side attack by accident.

Debutante

Abandoned Places is a fresh blast in the dungeon world. Many of the more nonsensical conventions have been ignored, like slamming doors on monsters, and new ideas have taken their place: push, pull and climb. The opening

Wandering around the countryside isn't all botany and blisters. Monsters are prone to attack at any time. Then you're whisked away to a dungeon-style wilderness to do battle with the villain. Once the fight's won though, it's back to the map.

Typical, you wait hours for a monster then two come along at once. In fights make sure that your back-row boys do something as experience is only gained for direct action. So no participation, no points, no new levels, no extra hit points...

out of the game from one insular dungeon to a full world works, but lowers the pace of the bash. New monsters and a new system of magic add to the fresh feel, introducing different parameters to the battles and spell effects.

There are a few rough edges that occasionally irritate, such as indistinct wall sections, but the lower threat level balances this. The pacing may be suspect with the game not getting dangerous or fast enough, but your opinion on this depends on whether you play for the thrill of combat or the challenge of puzzles and traps. The outside world section can feel remote, failing to reflect its importance within the game, but it is an ambitious attempt at taking RPGs further than ever before.

Abandoned Places is an outstanding first project by any standards, and it's an impressive first foray into the role-play domain for Electronic Zoo. It's not the toughest dungeon romp on the streets but it is the biggest. It's not the most thrilling, but it does have the extra depth of the town and wilderness sections.

What it does do is re-focus the *Dungeon Master* perspective away from combat and more towards true adventuring – where one of the biggest dangers is losing your way, not your life! The control system has been radically minimalised, so one screen carries all the information that parties need and yet still offers more control options than normal. *Abandoned Places* is a solid dungeon romp, and has frilly bits too! Its blend of styles and pace will not be to all RPGer's taste, but those who are willing to play a game for its own sake will be rewarded with a playing schedule that will take months to complete.

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If you thought all flight sims were 'gung ho', and that they were more concerned with killing than flying, think again. Civilian airlines are now boarding at gate 98!

Right. You're lined up for take-off. Spool up those multi-fan babies and roll. It helps if you set a bit of flap as well. Once off the ground, you've got to get to your correct height and heading as soon as possible if you want to avoid annoying everyone else in the skies over Europe at that particular moment in time.

Before take off, it helps to find the right runway. This is hidden in a maze of taxiways. In training mode it's just in front of you and to the left, which helps, because Air Traffic Control don't to tell you anything.

Airbus A320

The challenge is getting to grips with everything that a real pilot has to deal with.

I n the last few years combat aircraft have come with fly-by-wire and head-up display systems as standard. These work well, and they're now being employed on civil airliners, one of which is the Airbus A320.

The A320 is a twin-engined medium range job, with room for a couple of hundred people on board. It's a pan-European plane, parts of which are built in Germany, France and the UK, and its primary role is short-hauling its way around Europe.

In this simulation you get to fly a Lufthansa Airbus from the European city of your choice (within reason), to, er, another European city of your choice. The challenge is getting to grips with everything that a real pilot has to deal with. The detail included is

immense, so don't expect just to whack open the throttles and point at the sky.
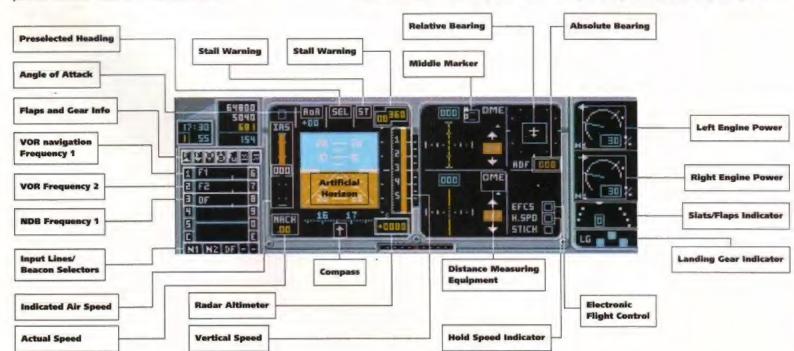
Best-laid plans

Before you're allowed to get anywhere you must file a flight-plan. You go to a screen where you must type in your airport of departure, arrival and any place you want to visit on the way. You must also put down how many passengers you're taking, how much freight and how many kilos of fuel you'll need. You

also tell the bureaucrats whether you'll be flying on instruments or visual flight rules (VFR). If you select VFR you're limited to flying in the daytime and below the clouds.

Once the office bods are happy with your plan, you are dumped into the aircraft. You sit in the left-hand seat (traditionally the commander's chair) and in front of you is a 50-50 split between the view out and the controls.

As well as the fly-by-wire, your Airbus has a 'glass cockpit'. This means the old electro-mechanical gauges and dials have been replaced by a primary flight display (PFD). This is a TV screen displaying speed, altitude, artificial horizon info, heading and vertical speed. It's like a HUD, but it's down on the panel, so you can't see the sky through it.

Preselected Heading

Angle of Attack

Flaps and Gear Info

VOR navigation Frequency 1

VOR Frequency 2

NDB Frequency 1

Input Lines/ Beacon Selectors

Indicated Air Speed

Actual Speed

Stall Warning

Stall Warning

Relative Bearing

Absolute Bearing

Middle Marker

Artificial Horizon

Compass

Radar Altimeter

Vertical Speed

Distance Measuring Equipment

Hold Speed Indicator

Left Engine Power

Right Engine Power

Slats/Flaps Indicator

Landing Gear Indicator

Electronic Flight Control

Finals are where you panic your way through the pre-landing checks you should have done minutes ago at 5,000 feet. Checks like gear down, power off and aim for the long straight road with the tiger-sized cat's eyes.

SIMS FAMILIAR

Flight simulations are one of the most popular games on the Amiga. They seek to recreate the flying experience by generating a 3D world which you can fly around in an aircraft model that has been tweaked to mimic that of its real world counterpart. Both World War I and II aircraft have been simulated as has virtually every modern decent fighter aircraft. These tend to have heavy manuals, but the complexity often forms part of the game's appeal.

Once you've cast your eyes over this array, it's time to spool up the engines. Each engine has separate controls, but you can control them both at once. OK, they're fired up. The power will settle at 17 per cent. Time to look for the runways and taxi-ways. When you've found the one you want, then it's throttles forwards until you start taxiing. The aircraft is controlled by the mouse, you can use it to steer on the ground by moving left and right. Once you find the runway, line up and kill the power.

Looking out of the left window, you see the airport whistle past. Flying around the airbase is fine in Training mode, but if you try anything spectacular when you're on a scheduled flight, the authorities have got every right to fire SAMs at you.

Would you trust this man? He's the dispatcher, who hassles you for all that boring flight-plan paper work. You can't just ignore him and nick the plane. Keep him sweet or you don't get the ignition keys.

which tell you which direction to go. You can then take off, head out in the right direction, get to the correct height (you'll be informed by ATC) and, er, fly along until you get there.

The graphics in A320 are almost incidental. You get half a screen of either day or night views of the ground, rivers, runways and fields. These seem pretty smooth, but the Airbus isn't cut out for low-level high-speed passes, so if you're playing properly, you don't get to see much ground detail. Sound is limited to engine noises and the odd warning. The engines sound excellent, and the feeling of power is real as you push them to the gate.

Radio chaos

Before you blast off, you've got to sort out your route. This is where it gets complicated. Radio beacons or varying types litter your route. There are VORs, NDBs and ILSs to sort out. Basically, you have to consult an aeronautical map and dial up the correct frequencies for the beacons you need, including the final one at the destination airport.

When these are locked in, a nav display comes into life. You get a set of cross-hairs

At about 8,000 feet you'll run into clouds. Not sweet puffy white things, but a mass of solid nothingness. At 10,000 feet you burst out into sunlight again, but of course your view of the ground is completely obscured.

A320 is for the purist. It's not something you can launch into; you have to read the manual and study the controls. It flies well, though, and you can tell when the fly-by-wire takes over (if you bank too far or try and stall). If you're a fan of civil aviation and you like mastering complex procedures as you approach at 130 knots, you'll enjoy it. But a game it's not, so don't expect excitement.

James Leach

FLY-BY-WIRE GIVES YOU THE EDGE

Traditionally aeroplanes have had hydraulic-mechanical control systems. This means that when the pilot moves the control stick and the rudder pedals, linkages connected to hydraulic cylinders transmit his movements to the ailerons, elevators and rudder.

Fighter aircraft, though, are designed with inherent instability. The idea is that a fighter doesn't want to sit happily flying straight and level, it's at its best in high turns or climbing and diving, and it should respond instantly to any movements on the controls.

Fly-by-wire, as seen on the F-16, F-18 and MiG 29 works like a digital computer joystick. Movements are transmitted into electrical pulses which are converted back into movements when they reach the plane's control surfaces. The advantage is that an on-board computer can monitor everything the pilot asks the plane to do. If the pilot puts the plane into a stalling situation, the computer can transmit its own signals to override him and avoid the stall. The computer is far more sensitive than a pilot, and can make adjustments thousands of times a second. It can also be linked to the throttles to control and oversee everything. So it's possible to fly (with the computer's help) at speeds and angles which run rings round other aircraft.

Fly-by-wire is being installed onto the next generation of civil airliners for the opposite reason. Instead of making the aircraft capable of more violent manoeuvres, it's designed to prevent these, especially at low speeds. The Airbus Industrie A320 has got fly-by-wire technology as standard, and after a few teething problems, such as the Paris Air Show disaster, when the crew flew low and slow over the airfield and the plane thought it was landing. It overrode the throttles when they were pushed to full power, and the plane crashed into a wood.

Airbus Industrie say that this can never happen again.

Navigation is at the heart of Airbus, using maps like this!

Airbus A320
Thalion ■ £29.99

● Very detailed, and quite difficult-to-get-into pedantic simulation.

● Takes ages to play and not a great deal happens, so forget about MiG avoidance.

● Smooth and realistic flight controls, though.

● A pure flight simulator, not for the fly-by-night fighter pilot.

Verdict 78%

Oh dear! Being zapped by one of Shredder's robots won't help you to save April, will it? Better get those green fists going.

Turtles – The Coin-Op

Now this is hardly fair. All you've got is a stick, whereas they've got dirty great hammers to clobber you with. Referee!

A fter the success of the first Turtles licence, it was inevitable that a conversion of the coin-op game would soon hit the shelves. For those who are unfamiliar with the arcade, the approach is different from the first Imageworks Turtles release. The coin-op is a sideways-scrolling beat-em-up, with up to four players controlling each of the individual Turtle characters as they try their best to battle their way past members of the dreaded Foot Clan to finally defeat the evil Shredder.

Turtle soup

The game begins with the Turtles answering a cry for help from their buddy, TV reporter April O'Neal, who is trapped in a burning office building. Unfortunately, Shredder and his cronies are waiting, and they whisk her away before you can rescue her. The battle then moves to the street, where bomb-carrying warriors await you. After a battle with one of Shredder's mutant heavies, it's into the sewers, where robots and a hovering spaceship need to be defeated.

Next it's back to the street, where road-signs are brought into play as weapons. After a struggle with both Bebop and Rock-Steady, April is saved – but the fight isn't over. Now you must battle through to save Splinter, who has been kidnapped by the Foot Clan.

This requires the Turtles to enter Shredder's underground base, which is patrolled both by Clan members and huge, powerful battle droids. Only when you have broken through these mighty barriers can you

Rock Steady has decided to make a run for it. Maybe you'd better get out of the way before you get trampled underfoot.

save Splinter and defeat Shredder once and for all... or maybe just for the time being!

I must say that I really wanted the conversion of the Turtles coin-op to be something special. Many a time I've spent far too much time and money on a Saturday afternoon bashing hell out of the Foot Clan – and I still never managed to finish the game!

Unfortunately, the Amiga version of the arcade hit misses the mark by a fair amount. A number of things are missing from the conversion, such as the four player option – which made things very frantic on the original! This is more than likely down to processor-time problems, which is evident by the fact that playing in two-player mode causes the game to judder like crazy. A lot of emphasis was placed on the fact that the graphics have been meticulously designed to emulate the coin-op, so why are they so horribly coloured? The original had some marvellous cartoon-style graphics, but the conversion simply looks like just another blocky beat-em-up.

Down at the arcade

A few of the moves that were in the coin-op are missing from the Amiga version, such as the vicious swipe as the Turtles jump in the air. This may not seem important, but it actually affects the gameplay quite significantly. Now the battles seem to simply consist of holding the joystick sideways and bashing the hell out of the fire-button. The collision detection affects the fights too, especially when you get knocked out by an enemy that is already supposed to be dead! However, the worst case of this is the gates on the sewer level. These have a collision area which is half as big again as the actual sprite!

The coin-op game is the one that most people said that Imageworks should have converted in the first place, but the version that has finally appeared doesn't really do the original game justice.

Maff Evans ☺

Turtles – The Coin-Op
Imageworks ■ £25.99
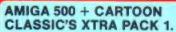
● Rather gaudy graphics don't capture much of the style of the original.

● A game needs more than about five sound effects to be atmospheric.

● Bad scrolling and collision detection make the game a chore to play.

● A half-hearted attempt to recreate the arcade game – stick with the original.

Verdict **60%**
AMIGA FORMAT

There are a growing number of simulations out there, ranging from snooker to football and from driving to flying. One area that hasn't had much attention though is Rugby, until now that is. *World Class Rugby* is an overhead-style rugby game, akin to the style of *Kick Off*. The game comprises of a single game disk that loads up and presents you with a comprehensive variety of options, ranging from altering the pitch and wind conditions and also the type of game being played, whether it be a World Cup game, or a friendly league match.

There are also a few more options, mainly concerned with changing the functions in the game, rather than the actual gameplay, such as the almost customary action replay

Scrum down! Ball coming in now! It's time to try (!) and win one of those pesky rucks, but unfortunately it seems that New Zealand are winning, indicated by the colour of the arrows beside the scrum. Oh dear.

World Class Rugby

function. There is also another function for viewpoint: 2D or 3D, but this seems to have little effect on the game – the screen looks exactly the same except for the colour of the pitch. The call is "Ice Cream".

Will Carling?
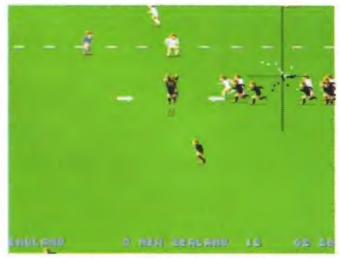
Controlling your players is a tricky process, with complex joystick commands to make them do different manoeuvres. Once mastered, though, the control process is easier, but still tricky. Everything in a normal rugby game has been included (except the fights). All your moves have to be done according to the rules of rugby, which is good, as the computer is good at picking up things like offside (if enabled) and gives out penalties accordingly.

All the features of the real game have been included. There are line-outs when the ball goes into touch (off the pitch) and when it is your throw, you are presented with a host of tactical options to employ. This also happens at scrums, when it is your ball. Winning these scrums and line-outs are not easy though, with luck playing a major part of it. Even tackling and kicking can be haphazard, with only a limited amount of control over your men, when you have it at all that is. Instead of automatically selecting the nearest man, you have to choose to control the best positioned man by various joystick combinations.

The presentation of the game is very good, with colourful graphics on the option screens, although the in-game graphics are a bit jerky and do not flow as well as they could. The characters are well defined though, and there are some good views in the action-replay mode. You can also save these action replays, but unfortunately you need a *World Class Rugby* expansion disk to actually view them after saving! The sound in the game is good,

The call is elephant. Yup time to choose which tactics you want to utilise and gain as much advantage over your opponent as possible.

What a disgraceful score! But wait! An excellent tackle by England have sent two of the All Blacks to the floor - perhaps all is not lost...

with some good atmospheric thud sounds when tackled, with other good effect through the game. Scrum down at 22 yards.

All black?

Rugby is a very physical game, and although all the different aspects of rugby, line-outs, scrums etc. are faithfully incorporated into the game, there is still a lack of real action, which is rather disappointing. It is all to easy to get into a ruck or be offside, the computer is pedantic about these things.

This is not to say that it is totally impossible to produce a game that would be full of action, it's just that the game requires little skill, because half the time the players seem to do what they want rather than what you are trying to make them do. This is fatal for those vital cup matches. It's just a case of where the ideas are good, the implementation is not quite up to scratch.

Asam Ahmad ☺

World Class Rugby
Audiogenic ■ £25.99

- The computer takes skill to beat – playing against another person is more authentic.
- Working out who is in control can be difficult due to a strange control system.
- The game contains all you would expect from a good Rugby Union game.
- The player controls are not intuitive enough to make it a fast and flowing game.

Verdict 68%

Calling slimy and heavily-armed occupants of interplanetary craft. Aliens get your guns, here come the all-important charts, and even more rootin' tootin' reviews. Yee-hah!

Spoutro ▶▶▶

Excuse me pardner, but wasn't the Wild West all set in the 19th century? Well if you fancy a shot at being sheriff visit Wild West World.

Wild West World
US Gold £25.99

Wild West World is set in the 18th Century, in 1741 (???) to be precise. Your task is to become the most powerful citizen in the region, yup pardner, *WWW* is a "power/domination" game. Respect (power) must be earned, and it's earning it by nefarious means that's the fun part where you claim jump and hire gunfighters to intimidate the locals. The graphics are a bit on the small side, with a few neat touches and there's the odd bit of sampled speech for effect. *WWW* is a new twist on a common concept – the power battle.

●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

Not only do have the power to order your Populous peeps around but with the World Editor you can determine what they look like!

Populous World Editor
Electronic Arts £14.99

Fancy a new graphic theme for *Populous 1*? Want to have your people live longer? Then, grab *Populous World Editor* and get snipping, clipping and drawing. It wasn't coded by the Bullfrogs but by a die hard *Populous* fan who wanted to make the game a little different. One year later the little difference has become a full editing suite for the graphics and game mechanics of Populous 1. Fun for games techies! (requires original *Populous*).

As one of three heroes you have to send the alien slime bags back from whence they came, or falling that, kill them quickly. Killing them is a lot easier, so lets begin! One, two three...

Alien Storm
US Gold £25.99

OK, you know the score, alien slimeballs have come to take over our planet because they've completely trashed their own. You're the only one hard enough to save us from becoming alien hors d'oeuvres. Cue sideways scrolling and *Operation Wolf* style blasting action, as you try to rid the planet of these foul alien slime bag type things.

Alien Storm began life as a coin-op with really smooth graphics and some smart sounds, unfortunately the Amiga incarnation doesn't. The graphics are big, colourful and well drawn, but need a little more polish to make them sing. The sound, well did you ever own a Stlyophone? It seems Tiertex (the coding team) did and they must still cherish it judging by the music. It's not THAT bad but it barely varies throughout the game and like the gameplay, the sound effects drain enthusiasm rather than drawing you into the game.

Alien Storm isn't really that bad, it's just not that good! The coin op was mindless but fun, the conversion is mindless and only occasionally fun. Playing with a friend does stretch the lasting appeal out a bit, and make life easier, but it can't carry the weight of a full game.

Tesco's was never like this! The Alien Storm hits the local hypermarket for the January sales.

MAGICAL HISTORY SCORE

THIS MONTH'S GAMES

Starglider 2	Mirror Image	88%
Knightmare	Mindscape	85%
Another World	US Gold	82%
Oh no! More Lemmings		
	Psygnosis	82%
Abandonded Places	Electronic Zoo	80%
Populous World Editor		
	Electronic Arts	80%
Soccer Stars	Empire	79%
A320 Airbus	Thalion	78%
Barbarian II	Psygnosis	73%
Bonanza Bros	US Gold	70%
Champions	Krisalis	70%
World Cup Rugby	Audiogenic	68%
Wild West World	US Gold	64%
Smash TV	Ocean	61%
Space 1889	Empire	59%
Alien Storm	US Gold	59%
Tip Off	Anco	50%
Fantastic Voyage	Centaur	49%
Cardiaxx	Electronic Zoo	25%

LAST MONTH

Populous 2	Electronic Arts	95%
Formula One GP	MicroProse	92%
MicroProse Golf	MicroProse	90%
Populous	Star Performer	89%
Stunt Car Racer	Kixx	89%
Birds of Prey	Electronic Arts	88%
Celtic Legends	UBI Soft	85%
Devious Designs	Image Works	83%
Rugby – The World Cup		
	Domark	82%
Strike Fleet	Electronic Arts	80%
Fuzzball	System 3	80%
4D Sports Boxing	Mindscape	79%
Covert Action	MicroProse	79%
The Dizzy Collection	Codemasters	78%
Shadow Sorcerer	US Gold	74%
Titanic Blinky	Zeppelin	74%
Supaplex	Dream Factory	73%
Air, Land and Sea	Electronic Arts	73%
Lord of the Rings	Electronic Arts	72%
Deathbringer	Empire	71%
Fort Apache	Impressions	68%
Cisco Heat	Image Works	62%
Aminos	Psygnosis	61%
Hagar the Horrible	Kingsoft	59%
Baby Jo	Loriciel	58%
Robozone	Image Works	52%
Under Pressure	Electronic Zoo	45%
Final	Blow Storm	43%
Captain Planet	Mindscape	43%
Wild Wheels	Ocean	41%
Necronom	Linel	23%

LAST YEARS SCORES

Battle Command	Ocean	90%
Z-Out	Rainbow Arts	90%
Damocles – Mission disk one		
	Novagen	89%
Wrath of the Demon	Empire	85%
Nitro	Psygnosis	84%
ECO Phantoms	Electronic Arts	84%
Car Vup	Core Design	83%
Carthage	Psygnosis	82%
MUDS	Rainbow Arts	81%
Ishido	Accolade	80%
Chips Challenge	US Gold	79%
Narco Police	Dinamic	79%
Ninja Remix	System 3	78%
Horror Zombies from the Crypt		
	Millennium	71%
STUN Runner	Domark	66%
Elvira	Accolade	61%
Ed the Duck	Impulze	61%
Eswat	US Gold	59%
Vector Championship Run		
	Impulze	42%
Botics	Krisalis	41%
Turtles	Image Works	35%

Tough as tough gets. Onslaught mixes arcade and tactics.

Onslaught
Mirror Image £7.99

A horizontally scrolling strategy game! *Onslaught* brings together furiously fast battling action and binds it up with a strategic map. You take control of a little fanatic who starts life with a mace and must use it to bash his way to victory. It's good looking and plays hard, very hard. It's the kind of game that you hate but have to play again. Luckily a save function alleviates a few good handfuls of torn out hair!

Just like the movie Fantastic Voyage, but a bit different.

Fantastic Voyage
Centaur Software £25.99

Essentially a flashily odd shoot em up, *Fantastic Voyage* puts you into someone's bloodstream and leaves you fighting for survival. Touch the edges and you die, get hit by too many blood cells and you die, carry on playing and you die – of boredom. *Fantastic Voyage's* slick presentation can't carry this tough shoot out down amongst the haemoglobin!

Classic dog fighting budget action with of Starglider 2.

Starglider 2
Mirror Image £7.99

Want to know what made *Argonaut* famous? Then grab a copy of the budget re-release of *Starglider 2*. A 3D space shoot out, the strategy emerges to grip you in this Amiga classic. Coded in the days when the Specy ruled, it still kicks butt now. Fast 3D shooting and enough brain work to waste many an evening, wet afternoon, sickie from work...

Compilation Corner

Now stand in a small room and hit the ball hard.

Champions
Krisalis £25.99

Manchester United, *Jahangir Khan World Championship Squash* and *World Championship Boxing Manager* team up to form a tough, but agile little compilation. Together they'll test your skills with the stick and with the balance sheet. *Man Utd* was the first club land outing for Krisalis and was a surprising success. It blends management and arcade games into one package. Unfortunately, the footie is duff but the management side and big games name save the day.

J Khan's Squash is the best action title of the bunch offering the best version of agoraphobic tennis to date. As for *Boxing Manager*, it's a solid, dependable sport management sim. It's never exciting, it's never thrilling, but beating your way to the top of the tree will take months. *Champions* offers a wide mix of styles and quality. If you missed *Squash* first time around and fancy one of the others too, then it might be a barg'.

Soccer Stars offers Kick Off, Emlyn, and Gazza 2!

Soccer Stars
Empire £29.99
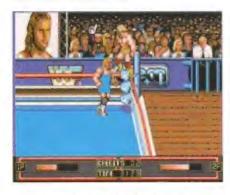
Football, bloomin' football, that's all you ever get on the monitor nowadays! Or it will be if you pick up this pack from Empire, which features some of the very best and some of the worst soccer action to be found on any format.

Emlyn Hughes International Soccer is good but slow, full of intricate tactical moves. *MicroProse Soccer* is a failed *Kick Off* imatation with a pitch window that's much too small and a name that's too big for it *Kick Off 2* is simply brilliant, the kind of game you bought your Amiga for. *Gazza 2* is an incarnation of the Gordie joker (!?!) himself – not worth playing, but at least the real Gazza has a knackered knee to excuse him!

An excellent compalation, containing two, very playable, footy games and two free disks to format and back them up with!

BUDGET CHART

1(6)	**Shadow of the Beast**	Sizzlers	£7.99
2(4)	**TV Sports Football**	Mirror Image	£9.99
3(3)	**Bubble Bobble**	Hit Squad	£7.99
4(-)	**Scooby-doo**	Hitech Software	£7.99
5(-)	**Return to Europe**	Anco	£7.99
6(-)	**Lombard RAC Rally**	Hit Squad	£7.99
7(10)	**Fantasy World Dizzy**	Code Masters	£6.99
8(9)	**New Zeland Story**	Hit Squad	£7.99
9(-)	**Wacky Races**	Hitech software	£7.99
10(-)	**Chase HQ**	Hit Squad	£7.99

This is NOT the Christmas chart. Due to dead-lines and Gallup's need to collate data, this is chart doesn't include the final week of Christmas shopping. It's a good indicator of what's going to be hot and what's flopped, but not the final word. The jury's verdict will be in next month's issue, AF32.

World Wildlife Fund

Complete with spangly tights, make up and silly names the *WWF Wrestlemania* boys and girls live up to their chart topping tip (AF30 Honest Dunk's Tote). The sales performance is even more impressive when you consider that the game only went on sale in the last few days of the survey. Why wasn't it reviewed this 'ish? As soon as the game was finished it was mastered and in the shops, Ocean didn't even have time to send review copies of the *finished* game out!

My kingdom for a Norse!

The young lad *Heimdall* sails straight into the number two spot, pillaging everything is sight. The Norse god-to-be sports some of the best graphics ever seen in a playable game, along with some neat tricks on the gameplay front. How do Core do it? *Corporation, Thunderhawk, Heimdall*... can *Wolfchild* (their first 1992 release) be as big?

Good Cod!

James Pond's stunning return in *Robocod*, sees him higher than ever in the Gallup charts.

He jumps straight in at number 3, making him Millennium's fastest chart shooting star of the year! What a game and what a time to do it, amongst the hurley burly of Christmas. Good show, Millennium type chappies!

At last!

Dueteros, Activision's wonderfully weird space management simulation that was delayed by corporate wrangling finally made it out last month. Now it's finally made it into the charts. Proof positive that a good game really is worth waiting for!

BELOW

So why weren't *WWF, Leander* and *Moonstone* reviewed? Well we didn't get copies of *WWF* or *Leander* (hint, hint Psygnosis and Ocean peeps!) to review. We thought of making it all up and getting Frank to draw some pics, but ...

As for *Moonstone*, well there just wasn't room. It's a solid sort of game, a high gore rating beat em up with adventure overtones. AF74%. Faster than a speeding...

THE AMIGA FULL PRICE CHART

1(-)	**New**	**WWF Wrestlemania** Ocean	£25.99	See below
2(-)	**New**	**Heimdall** Core Design	£34.99	88%
3(-)	**New**	**James Pond 2 - Robocod** Millenium	£25.99	FG91%
4(1)	▼	**Lotus Turbo Challange 2** Gremlin Graphics	£25.99	89%
5(-)	**New**	**The Simpsons** Ocean	£25.99	81%
6(2)	▼	**Alien Breed** Team 17	£24.99	74%
7(5)	▼	**Jimmy Whites Whirllwind Snooker** Virgin	£29.99	FG91%
8(3)	▼	**Mega-lo-Mania** Mirrorsoft	£30.99	FG90%
9(8)	▼	**Terminator 2** Ocean	£25.99	60%
10(-)	**New**	**First Samuri** Hitech Software	£30.99	FG91%
11(-)	**New**	**Pit Fighter** Domark	£24.99	60%
12(-)	**New**	**Knights of the Sky** Microprose	£34.99	88%
13(4)	▼	**Final Fight** US Gold	£25.99	60%
14(9)	▼	**PGA Tour Golf** Electronic Arts	£25.99	FG90%
15(15)	■	**Monkey Island** US Gold	£29.99	FG91%
16(-)	**New**	**Deuteros** Activision	£25.99	FG95%
17(-)	**New**	**World Class Rugby** Audiogenic	£25.99	68%
18(21)	▲	**Board Genius** Beau Jolly	£29.99	Comp
19(6)	▼	**Rugby, The World Cup** Domark	£24.99	82%
20(-)	**New**	**Fun School 4 (7-11)** Europress Software	£24.99	N/A
21(-)	**New**	**Microprose Golf** Microprose	£34.99	FG90%
22(-)	**New**	**Leander** Psygnosis	£25.99	See below
23(-)	**New**	**Lemmings Data Disk** Psygnosis	£19.99	82%
24(-)	**New**	**Moonstone** Mindscape	£30.99	See below
25(-)	**New**	**Manchester United Europe** Krisalis	£25.99	80%
26(24)	▼	**Super Space Invaders** Domark	£24.99	82%
27(-)	**New**	**Face Off Ice Hockey** Krisalis	£25,99	83%
28(-)	**New**	**Battle Isle** UBI Soft	£30.99	FG90%
29(13)	▼	**Cruise for a Corpse** US Gold	£27.99	FG90%
30(28)	▼	**F15 Strike Eagle 2** Microprose	£29.99	FG90%

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Archipelagos, Atomic Robokid, **Awesome,** Back to the Future II and III, **Car-Vup,** Chip's Challenge, **Chuck Rock,** Crackdown, **Drivin' Force,** Dynamite Dux, **E-Motion,** Empire Strikes Back, **ESWAT,** Ghostbusters 2, **Ghosts 'n' Goblins,** Gremlins 2, **Hammerfist,** Horror Zombies, **The Immortal,** Ivanhoe, **Kid Gloves,** Killing Game Show, **LED Storm,** Line of Fire, **Llamatron,** Lotus Esprit Turbo Challenge, **Manic Miner,** Midnight Resistance, **Monty Python's Flying Circus,** Narc, **Ninja Spirit,** Nitro, **Operation Thunderbolt,** Predator 2, **Robocop 2,** Saint Dragon, **SCI,** Shadow Warriors, **Skidz,** Spherical, **Spy Who Loved Me,** SWIV, **Teenage Mutant Hero Turtles,** Toki, **Turrican,** Turrican 2, **Virus,** Viz, **Z-out**

FULL SOLUTIONS FOR:

Cruise for a Corpse, Dragons Lair II, **Fantasy World Dizzy,** Indiana Jones III, **Leisure Suit Larry,** Maniac Mansion, **Rick Dangerous 2,** Rise of the Dragon, **Search for the King,** Secret of Monkey Island, **Time Machine,** Treasure Island Dizzy, **Wonderland**

EXTENSIVE PLAYERS' GUIDES :

Armour-Geddon, **Battle Command,** Captive, **Carrier Command,** Deuteros, **Dragons Breath,** Eye of the Beholder, **Full Contact,** Gods, **Hero Quest,** Indianapolis 500, **James Pond,** Lemmings, **Mean Streets,** Pang, **Prince of Persia,** Speedball 2, **Spindizzy Worlds,** Supercars 2, **Warhead**

Costing only £9.95 The ultimate guide to Amiga games has been succeeded by an heir. **Maff Evans** has spent months putting together a brand new collection of top tips, helpful hints and informative reviews.

Game Busters

After the belly-busting helping of **Gamebusters** we dished out last month, **Maff Evans** has had to calm himself down and have a bit of a lie down in a dark room. Luckily, though, he has found the time to cook up some hefty portions of tips to keep you going until the next sitting, so let's dine...

HUNTER

A big game and a difficult quest – especially for one person. Follow these tips and the map to beat this multi-vehicled adventure.

To begin with, collect all the items from the two huts on the starting island. Board the boat and head west toward the stores. Once there, enter the stores and click on AUTO. Before leaving the island, enter the house and collect the money and enemy uniform. Put on the uniform and go back to the boat.

Read the log book and click on the first man. Go to coordinates X136, Y80 and enter the hangar. Collect the fuel and get into the ambulance. Drive to the position marked FIRST MAN on the map, enter the hut and select 'TALK'. He should then give you the coordinates of the old man (X181, Y197). Enter these into the log book and head back to the rocket boat by the hangar. Put some of the fuel in the boat and head for the coordinates the first man gave you.

You should now be by a light house, so go in and give the old man money until he won't take any more. Now select 'TALK' and he will give you the coordinates of the second man (X99, Y61). Put this in the log book and head to the coordinates in the rocket boat. Go to the church to find the second man and give him grenades until he refuses any more. He will now tell you the position of the professor.

Head towards position X59, Y46 to find the helicopter. Add some fuel and head towards position X146, Y169. Look behind the windmill to find the master key, then head toward the power station (where the professor is situated). Enter the station and select 'TALK', at which point the professor will ask you to retrieve the nuclear device from position X28, Y227. Return to the helicopter, add some fuel and fly to the device. When you arrive there will be three small huts surrounded by

an electric barrier. Don't enter the right-hand hut or touch the barrier! Use timed explosives to blow up the right hand hut, then enter the middle hut and collect the nuclear device. Fly back to the professor and give him the device, then select 'TALK' and he will ask you to collect a disk from X100, Y225.

Go to the third man (coordinates X195, Y119), return to the helicopter and travel to X224, Y123 to find some fuel. Fill the helicopter and also carry as much of it as you can. Now fly to the location of the disk and enter the house. Look behind the washing machine and collect the disk before returning to the helicopter. Fly to the third man (who will be hiding behind a rock) and select 'TALK'. He will tell you to collect a security pass from X90, Y153 and also tell you the location of the computer (X224, Y199). Collect the security pass from the office and head towards the computer (which is housed in a fort).

Make sure that you are wearing the enemy uniform and you can then enter the fort. Operate the computer and enter the information that it gives to you into the log book. Now head towards the prison at X135, Y239 and enter it. TALK to the prisoner until he tells you to fetch a saw from coordinates X151, Y121, then head towards this position.

Enter the building and collect the hacksaw and antibiotics. Head back to the prison and give the hacksaw to the prisoner. He will then tell you to go to the green monk at X85, Y174. Go out and collect an animal of some sort (for food). If you can't find one then try the house at X35 Y248. Go to the green monk, who will tell you to go to an injured soldier at X10, Y36. Enter the building and TALK to the soldier. Give him the antibiotics and return to X151, Y121 to pick up another antibiotic. Go back to the hospital and give the soldier more antibiotics until he tells you the wherabouts of the General X135, Y239). He will also mention a scroll which is at X91, Y173.

Collect the scroll on the way to the General, who's location will turn out to be the prison you visited earlier. Blow up the prison using grenades, a bazooka, mines or an ASM from the helicopter. By fiddling with the zoom control you will see the bunker before blowing up the prison. Enter the bunker from the south (away from the screen) to find the General. Shoot the General and collect his head before returning victorious to HQ.

Travel Tips

The helicopter is the best vehicle, but other vehicles may also be of use. If you need fuel for any of them then check out the location of fuel dumps listed below.

Locations of Fuel (X,Y)

006,145	134,068	249,109
008,124	143,030	250,237
063,039	145,051	251,100
084,245	168,107	
101,134	176,249	
110,106	224,123	
120,155	242,077	

**Paul Gibson,
Haverfordwest, Dyfed**

Mega-Lo-Mania

Following on from last issue, here are some pointers straight from the horse's mouth to help you on Epochs four, five and six.

Part 2

General Hints

Epochs four and five usually involve you getting involved in long, drawn-out, tactical battles, this is because the weapons that are usually instantly available from gatherable elements, all but disappear.

On later levels, try to ally with the strongest opponent as often as possible, since alliances play an increasingly important role.

The landscape of Karma forces you to work your way around the entire island. Try to make sure that your sectors are adjacent to one another and throw all your armies into the two bordering sectors as defence.

You'll find that cannons are particularly important on Epoch four and on the Ingle island in Epoch five.

Lada is a pretty tricky island, so you may need to use more men than usual to begin with. Try to ally with at least one of your neighbours immediately.

During the long battles on Epochs four and five, the use of shields to reconstruct your building is essential.

Use of aeroplanes (and later nukes) on multi-island levels is essential. Don't waste all your minerals on non-flying weaponry, otherwise you will find yourself in a losing position at worst or a stalemate at best.

Nausea, being the first of the split islands, is a right b... er... rotter to beat. To win you really need to own the bottom left sector of the South island. The far right sector of the South island is also useful, since you can use biplanes to top up your force.

Ocarina is impossible to beat using normal tactics. You really need to use more men

than usual and get in a quick attack. If you allow your opponents to develop their forces to any extent then you've had it!

Epoch six is an introduction to the 'high-power' arms race that tends to dominate the later levels. If you work quickly, you can win the levels by conventional means, but more often than not it's a straight race to be the first person with nuclear capabilities.

An essential part of playing the multi-island levels is the initial choice of sectors. Try to work your way onto an island of your own accord, since this will give you valuable breathing space. Alternatively, try to form enough to give your opponent a quick bash in the unmentionables!

A useful tip against a final enemy with one sector left and nuclear defences, especially if you only have one sector yourself, is to try and break into another sector. You can then try and build up a nuclear strike which will destroy your starting sector, but you will still be able to win.

Always check whether the sector you are launching a nuclear strike against has nuclear defences. You could get into a pickle if you don't make sure!

If you keep designing lower-level inventions, you may hind that high-level designs become available to you. Remember that you need a laboratory to build planes, but you don't get one until you are onto the Victorian Ern (sic). The only way to increase your technological level is to keep designing.

On later levels, you may not have enough shields to save your buildings, so remember to get all your men out before they disappear.

Remember to keep watching the shield menu to see when to evacuate buildings, but try to protect your tower, since losing this will lose you the sector.

Ideal Elements for Inventions

Wood, Rock and Bones:
Nuclear Defence, Shields
Slate, Moonlite and Planetarium:
Machine Gun, Jet Plane, Shields
Bethlium, Solarium and Araldite:
Biplane, Nuclear Weapon, Shields
Herbirite and Yeridium: Shields
Valium and Parasite: Machine Gun
Aquarium and Paladium: Jet Plane, Bazooka, Nuclear Weapon, Nuclear Defence, Shields
Onion and Tedium: Biplane, Machine Gun, Jet Plane, Bazooka
Moron: Biplane, Flying Saucer, an SDI Laser, Shields
Marmite: Nuclear Weapon, Nuclear Defence, Flying Saucer, Shields
Alien: Flying Saucer, SDI Laser, Shields

EPOCH CODES	
Level	Code
Epoch 2	BNYABDJNBHY
Epoch 3	COVCPMJVEBL
Epoch 4	WKCCH1EUKNI
Epoch 5	EMOADOXXHOJ
Epoch 6	WWKDXGPXDBZ
Epoch 7	KUUCTOPLGHV
Epoch 8	PEHAJBPKZAQ
Epoch 9	GYJDJHPNFHN
Epoch 10	TJLBVSNNIGD

EPOCH 4

JUNTA

KARMA

LADA

EPOCH 5

MANTRA

NAUSEA

OCARINA

EPOCH 6

PYJAMA

QUOTA

KEY

GATHERABLES

OPEN CAST MINE

PIT MINE

RUMBABA

LAST NINJA THREE

A balaclava and a pair of silk pyjamas may make you look like a Ninja, but you still need the ancient skills to be able to fight like one. If you can't even manage this on a computer game, but want to explore the levels, then you'll probably need to use a code or two. Try typing these into the score table:

Level 1	SUSS
Level 2	IMED
Level 3	URTI
Level 4	BASD
Level 5	NOUS
Level 6	RERO

Barry Mathias,
Milford Haven, Dyfed

PEGASUS

The heroism and bravery of flying around on a horse! What a fine warrior you cut as you swoop from the heavens to deal a fatal blow to the enemies below. But what a sad, laughable character you look as you fall off, only to be dealt with by the horrid creatures. Never mind, you can still break through to the later parts of your quest using these codes:

SCREECH
DRAGONFLY
BEEBOP
CELESTIAL

Jason Tomkin,
Whitefield, Manchester

HELPING HAND

Softly, softly – catchy murderer

Can you help me with a couple of problems? On *Operation Stealth* I've managed to get through the security door, but I just can't work out how to get through the electric door next to the guard with the bullet-proof glass.

Also, on *Cruise for a Corpse* I've got as far as 9:10, but I can't find any tools or keys. I've interviewed Suzanne, Julio and Tom as far as they will let me. Please help! I'm not allowed any more games until I've completed these two.

Mrs Mary Spinks,
Okehampton, Devon

Well, if you want some more games then I'd better see what I can do.

By the security door on Operation Stealth, I imagine that you have already used the top cigarette in the case to get the fingerprint on the glass, then used the print on the panel. From here on in you should use the authorised mission you got before on the mailbox down the passage, then use the electric cable on the plug socket. Operate the razor, use it on the bin, examine the bin and then use the razor on it again. Now you can go on through the door to meet the doctor.

As far as Cruise for a Corpse goes, the fact that you haven't met Father Fabiani makes it appear that you are having the same trouble as someone last month. Go to the bar and show the note about the meeting (found in the room where you start) to the barman. He will then give you a prayer book containing a letter. Take the letter and read it before going to the dining room to meet Fabiani. Got that? Good, I'm not going to print it again!

Escape from the future

I recently purchased *Terminator 2* and *Escape from Colditz*, but unfortunately I can't get past level two on *T2* and I can't escape from *Colditz*! Please can you give me any cheats on these two?

Mark Sinclair,
Milngarie, Glasgow

£25 *Oh dear. Can't get past level two of T2 eh? Well we all found it far too easy to complete the whole game (hence the low mark). Still, if you want to cheat then try this tip from Chris Brady in Birkenhead. Start the game and press 'P' to pause, then press all the function keys in turn. Press 'P' to unpause and you will now be able to use the Esc key to skip levels. Unfortunately, we don't know of any cheats for Escape from Colditz, so it's over to you readers to send one in!*

Don't have a cow, man!

After purchasing an Amiga for our 11-year-old, our son cannot get past level one on Bart Simpson. As he can reach level 25 and over on *Lemmings*, I don't think it's a brain malfunction!

We noted your Gamebusters hints saying "if you have sprayed all the purple objects but still have one goal," etc, but he has stood outside the Springfield Cinema for so long, I fear they've changed the movie! Hence he runs out of time, but can get the other goals on level one in a very short time. Can you suggest anything else.

Mrs T Jarmin,
Leighton Buzzard, Bedfordshire

Well a couple of things come to mind. If you still need a purple object to spray, then try using a coin in the phone booth next to Moe's. A woman will come out wearing a purple tracksuit, so spray her to bring the goal counter down. Another thing you could try is typing COWABUNGA when the screen with the family watching TV appears. You should then be able to play the game with infinite lives. If you want even more tips on playing the game, then the Screenplay 2 book contains a guide to completing level one.

Oh fishy, fishy, fish!

I desperately need cheats for *James Pond* and *Ghouls 'n' Ghosts*. Can you help me please?

Ben Fuller,
Luton, Bedfordshire

Easy mate! For James Pond, just type in JUNKYARD at some point during the game. Return will toggle the cheat mode and D will open the exit pipes to the next level. You can also select levels using the bottom row of keys on the keyboard. As for Ghouls 'n' Ghosts, all you need type is KARENBROADHURST on the title page. There you go. Told you it was easy.

A lot of people are writing in asking for help with involved adventures, especially for Cruise for a Corpse. Unfortunately, we can't give a full description of the stages that people are at in Helping Hand, since everyone has reached a different point! If you're desperate, though, the Screenplay 2 book contains a full solution to the game which should sort out your problems.

If you're stuck on a particular game or have a solution to a letter printed in the magazine, then write it down and send it in to us at HELPING HAND AMIGA FORMAT, 30 Monmouth Street, Bath BA1 2BW.

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ONCE UPON A TIME...

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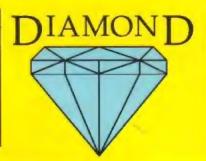
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If you wanted true colour on your Amiga 500 you only had one choice, until now! **Marcus Dyson** is amazed at Digital Creations new feature-packed True Colour system that lets you digitise, process and paint with a 17 million colour palette.

DCTV

True colour digitise/process/paint system

£499 (Provisional) ■ Digital Creations

HAVING SEVENTEEN MILLION colours to play with is a most excellent prospect for anyone using the Amiga for graphics or video work, but until recently it meant having an Amiga 1500/2000/3000 fitted with a 24-bit card. Digital Creations DCTV (Digital Composite Television) brings this immense palette to users of the humble A500. It achieves this by using a system that reinterprets the information held in a high-resolution Amiga screen display as composite video waveforms. DCTV enables the Amiga to handle and display true colour images at the same speed and using the same amount of memory as normal high resolution animations.

Now we all know that HAM-E can do something very similar to DCTV, and at a slightly lower price. But the big catch with any True Colour system is how do you get those gorgeous images into the computer in the first place, you certainly wouldn't want to (and probably couldn't) draw them from scratch. The great advantage of DCTV is the inclusion of a digitise function in the packaged software. This allows you to capture images from video cameras, video cassette recorders, still video cameras or any other source that has a composite video output.

The only drawback of DCTV is that to use it fully you need a composite monitor and five megabytes of memory, which by Amiga standards is quite a lot of RAM, but if you were manipulating True Colour images on most other computers you would need a good deal more memory than this. The main features of

DCTV
Contact
Silica Systems
081-309 1111

A typical DCTV set-up, all ready to digitise an image. The Amiga has 1Mb of RAM and there are another four in the GVP hard drive, taking it up to the magic 5Mb that are required to use all the functions simultaneously. The video camera signal is being fed into the DCTV unit and displayed on the colour TV by feeding the DCTV output through a VCR with a video input.

the package are available to users with as little as 1Mb of memory, but this involves running the digitiser part of the program (*DCTVProc*) separately to the paint program (*DCTVPaint*).

Rather than displaying digital RGB signals DCTV uses composite video information stored in the Amiga screen display, and control codes in at the top and left of the image inform the DCTV hardware that it is a DCTV image and should be treat as so. On an RGB monitor the images look like a very coarse greeny-grey mess, which if studied carefully will just yield the general outline of the image. But when viewed on a composite screen the image appears in all its glory, at a resolution which appears as near television quality when looked at from normal TV-viewing distances.

Setting up the DCTV hardware is a doddle, because it simply plugs into the RGB socket, and has a pass through for the normal Amiga monitor lead. If you are digitising there is another lead which plugs into the parallel port. A phono plug provides the signal for the composite monitor, and a similar plug takes the signal from your digitising source. The RGB pass-through lead fouls the A500 power lead to an extent, but it's nothing serious.

If you don't own a composite monitor, don't worry, because if your video recorder has a 'video in' socket you can take the output from DCTV into this, and the RF out of your video into a normal colour television. One side effect of using this system is that you can easily record your DCTV images and animations

onto video tape for storage, or to show them to your friends who don't have DCTV, or even an Amiga for that matter. When it's used with a genloc and something like *Scala*, DCTV will allow video presentations of professional quality to be produced on any Amiga at a cost that the enthusiastic amateur could afford. The desktop video revolution continues.

So much for the hardware, the true strength of DCTV lies in the Software, it's fast powerful and easy to use, if a little daunting at times. so let's look at the DCTV program, and why no-one should be without it.

DCTV

SPEED ● ● ● ● ●
Considering what it is doing, DCTV is plenty fast enough, even on a plain A500.

DOCUMENTATION ● ● ● ● ●
The manual helps you get started quickly and easily and covers the features step by step.

ACCESSIBILITY ● ● ● ●
Most of the features are easily accessible via easy-to-use interfaces on each screen.

FEATURES ● ● ● ● ●
Digitise, process paint and animate true colour images. What more could you want?

VALUE ● ● ● ●
It's not as cheap as HAM-E, but then you don't need to buy a digitiser.

GOLD 90%

Digitising and processing using DCTVProc

The DCTVProc control panel has a simple lay out and is easy to understand, all the functions are available through the buttons and sliders with no menu controls at all. The file handling controls are at the left, digitise is in the centre and image processing is on the right.

BEFORE YOU CAN use the wonderful *DCTVPaint* software you need some images to work on. Now creating a true colour picture from scratch is no easy matter, so most people use an image 'captured' from some other source, which could be a film or TV program (naughty but this is the sampling generation) or it could even be from your own holiday snaps. To get these images into the computer you need some kind of digitiser. The DCTV software includes just the thing, all you need is some suitable video source: a colour video camera like the one in the big picture on the left would be ideal.

button. Now all you have to do is press the left mouse button and the picture will be captured, it takes between five and ten seconds and the picture must be still for this time, so if you are using a VCR you will need a good pause function. After waiting for a few seconds to process the image it will appear on the monitor ready for image processing.

The image process functions are not as extensive as those found in HAM-E's Image Professional software, but this is not so important since you have the features of the excellent *DCTVPaint* at your disposal. Rather than featuring a wide range of effects to apply to the digitised image DCTV has a few controls to improve (or degrade if you so desire) the quality of the picture.

The big difference between the image processing effects and those available in the paint program is that these are global, they affect the whole of the image, and there is nothing you can do to alter that. The effects are subtle and it pays to play with each one at a time at first to get used to what they do. Otherwise you may end up using several at once to get an effect you really like, but can never duplicate.

If you don't like the way your picture's going you can click LAST for one level of undo or RESET to take you back to the start. Once you press COMM (commit) however there is no going back unless you have already saved the image at an earlier stage.

DIGITIZE AND PROCESS				
OPTS	SOURCE Camera	SCAN	SCREEN 736x566	Color 0
PRINT	Tape	MAKE	4 planes	Tint 0
CONV	DIGITIZE Lace	COMM	SET	Brite 0
LOAD	Filter	SWAP		Cont 0
SAVE	QUALITY Std Hi		LAST	Sharp 0
	SPEED			Red 0
	SPEED			Green 0
QUIT	1 2 3		RESET	Blue 0

The DCTV hardware has an RCA phono plug which will accept composite video information. By clicking on the digitise button on the left of the main DCTV control panel you are delivered to the DCTVProc screen. Like all the DCTV software this screen is controlled by 3D-style push buttons and sliders, a method which is both attractive and easy to use. From here you can view your source picture on the composite monitor by pressing the SCAN

DCTV lets you digitise easily and simply, giving excellent results immediately. Within minutes of setting it up you'll get into the groove of making pictures this good.

After taking up the brightness, tweeking the contrast and increasing the colour saturation Madonna has gone a bit pale. The few image processing tools can have a drastic effect.

Another straight digitised picture shows what you can easily achieve with DCTV.

If sir thinks the NSX looks too much like a Ferrari in red just press this button here and voila! Now why don't the red car and the blue car have a race.

Once you've digitised and processed your image with DCTV, then you can really start to have fun with it, **Marcus Dyson** explores the world of pixel painting using...

DCTVPaint

Video paint package
Packaged with DCTV Hardware

DELUXE PAINT THIS isn't! When the manual waxes lyrical about DCTV's universe being that of video, with over 16,000,000 colours, where operations work in chrominance and luminance, it seems at first like excessive Californianess. But after playing around with *DCTVPaint* for even a short while you will realise that the possibilities are virtually endless.

Sure *DCTVP* can do most of the things you can do in *DPaint*, but you have to ask yourself: "Would I want to do that in *DCTVP*?", why would you wish to draw polygons and fill them with a dithered sixteen colour gradient when you can work on a 'real' image with a degree of sophistication that will make it difficult to tell where, and how you have manipulated the image.

Now I'm not knocking *DPaint* here, it's the best at what it does, but *DCTVP* does something else altogether. It is virtually a computer-based, photo retouching package, with a little imagination, and the right images, you can create whatever illusion you desire.
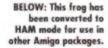
DESPITE THE VALLEYSPEAK the manual is correct, *DCTVP* does indeed work in terms of chrominance and luminance, but that isn't as mysterious as it first sounds. Video signals are comprised of two parts: one determines the brightness of a given pixel, and that is the luminance, the other controls its colour or chrominance. *DCTVP* allows you to modify these elements individually, and in a great variety of modes, enabling superb control of the picture. Another great strength of the program is the ability to rub through an image from the spare screen onto the current screen. Many programs allow this, but *DCTVP* goes beyond most to allow rub through to work not just as a tint but even a graduated fill.

Altogether *DCTVP* has nine paint modes which are as follows:

SOLID: You all know and love this one, select a colour and paint on screen with it, simple really! Can be used in conjunction with the **FLOW** to control the rate at which it is applied to the screen, thus how well it covers what is already there.

TINT: Uses the selected colour to modify the chrominance of the colour on screen while

This surfer and the on-looking girl have never even met (well not to my knowledge), they were both in totally separate photographs until last night. Using the rub through mode in conjunction with the filled rectangle and airbrush tools brought him right out of his world and into hers.

The world was created using blend and water-colour brushes, then cut and filled using the warp function to create this planet.

BELOW: This frog has been converted to HAM mode for use in other Amiga packages.

BELOW RIGHT: Using graduated fill a colour image was rubbed through onto a black-and-white one to produce this image.

leaving the luminance intact. Using this you can colourise a black-and-white image or change the hue of a colour image. Again it is affected by the flow rate of the brush.

SHADE: Almost the opposite of tint, this affects the luminance of the screen area it is used on without changing the colour. The effect depends on the currently selected brush colour. White will lighten an area, black will darken it, again it depends on the rate of flow.

AIRBRUSH: This is the default painting mode and as far as I can tell it is almost the same as solid colour mode.

WATERCOLOR: This interesting mode charges your brush with a finite amount of paint every time you press the left mouse button, but as you move the mouse pointer the paint 'runs out'. The flow setting determines how much paint is on the brush, at 100 per cent it behaves like the airbrush, at lower settings the paint runs out to nothing, but the brush remains wet, so it smears anything that it passes over.

BLEND: As it's name suggests, blend mode picks up and mixes paint as it travels over an area. as usual the amount of effect is determined by the flow setting.

SMOOTH: This basically 'averages' out the colour of all of the pixels that are under the brush using a preset algorithm, the overall effect is to actually improve the transition of areas of shading.

TAKING YOUR CAR THROUGH DCTV PAINTSHOP

First we load our picture, this Porsche and moon montage is one of the DCTV demo images and shows what can be done quite easily when using the program. But a white sports car is a bit too dull for my extrovert nature, so let's see what we can do.

Since it's just the car we want to effect, and not the background, we have to make a mask to protect the areas of the screen which are to remain unchanged. DCTVP masks can be drawn using any of the tools and made opaque (as above), translucent or invisible, the translucent one is particularly good when deleting areas from a mask.

After loading a picture of a frog into the spare screen and using the filled rectangle tool to rub part of the image through to this screen I clipped the frog's eye to use as a fill. The paint bucket tool allows you to tile a clip in various ways to produce a patterned fill. I then filled the car's bodywork with a tint fill (to affect the colour only) at around 50 per cent flow.

The three main paint modes are all visible on this car, at the front TINT has changed the colour while leaving the features clearly visible, in the middle SOLID has obliterated all detail, but was still constrained by the mask, at the back SHADE has darkened the car's details without adding colour.

RUB THRU: This allows you to replace areas of the current screen with areas of the spare screen, used with the other features of DCTVP this can give some of the most spectacular effects available with the program.

FILTER: Some colour and transitions that can be made in a video paint package are not strictly 'legal', that is to say they will produce affects on screen like banding, fringing and crawl. If your image was created in DCTV using the filter on option this will not be a problem, but if you paint on the picture heavily you may cause these effects to occur. By using the filter mode you can make the areas you paint on conform better to the requirements of video.

Armed with all these modes, most of which can be used with many of *DCTVP's* tools, you are equipped to create some amazing images.

The brush palette of *DCTVP* has one or two interesting brushes particularly suited to video painting, the pyramid and cone brushes both give automatic graduations. By concentrating their effects in the centre of their (respectively square and circular) shapes they are especially good at creating smooth rub throughs and fades. It is even possible to import brushes from *Deluxe Paint* or a wide range of other Amiga programs to use as 'clips'. A clip is a piece of a screen which has been cut out (Via the polygon tools or freehand) and can be used as a brush, as a fill, or stretched, skewed, rotated and manipulated in many different ways.

The myriad features of *DCTVP* can be rather confusing, and the way that many of them work in conjunction with one another doesn't help matters either. If you don't check that you have everything set correctly before commencing an operation you could well find yourself waiting a couple of minutes, when it was obvious after a few seconds that things were not as you planned. There is also no way of aborting most of the features once processing begins. But with a little bit of trial and error I think you'll find that this package is probably the key to making the best Amiga images we've seen so far. ⏩

DCTVPaint	
SPEED	● ● ● ●
Fast enough even on a basic Amiga, accelerator users would have it easy.	
DOCUMENTATION	● ● ● ●
Clear and concise with good tutorials, but only just scratches the surface of this huge package.	
ACCESSIBILITY	● ● ● ●
Control panels easy-to-use, but so many combinations of effect it takes patience.	
FEATURES	● ● ● ● ●
More than can be touched on in these two pages, almost all you need for video retouching.	
VALUE	● ● ● ● ●
Free with the DCTV hardware, it's a pity this software is not available separately.	

AMIGA GOLD FORMAT

95%

Rivalry at the top of the 3D modelling tree is hotting up. The latest Real 3D version has it all AND its easy to use. A two dimensional **Brian Larkman** bursts through into the third dimension with...

Real 3D 1.4

Solid Modelling package ■ £310 ■ ACTIVA

WHEN WE REVIEWED the original *Real 3D* it had the potential to be the best on the Amiga. There were some shortcomings though, but these have now been addressed. The result is an improved, hugely powerful easy-to-use program.

New on the menu front are composite modelling tools, free form modelling, point editing, bend and twist, bump mapping, fog effects, 24-bit rendering, animated textures and morphing and key-frame animation. Animation is also well supported with seven methods available.

Real 3D has three modules. The tri-view editor is like *Sculpt 3D's* but with the gadget icons gathered into a tool 'palette'. The Perspective Wire-frame view has tools to rotate and zoom the viewpoint and set it for rendering, and can preview animations. The Solid model control panel is where resolution, lighting, anti-aliasing and other modelling functions are set, and where testing and final rendering is controlled.

A well thought out feature is the selection window in tri-view. All objects are named as they are created and are then placed in a hierarchical list. They are then selected for modifying by clicking on their name in this window. If the list is carefully set up, primitives, groups or whole complex objects can be selected with ease and worked on. Almost all modelling functions are available from on-screen icons. These are simple and obvious. One fault, though, is the lack of warning when loading and saving. Anyone with brains will back-up important work, but it is possible to save a blank scene or test over a complete week's work instead of loading it.

Almost all Amiga 3D systems are surface or 'skin' modellers using a series of faces or facets joined to define hollow objects. *Real 3D* instead uses a true solid modelling technique. Each of the 'primitives' used is a quadratic surface – 3D graphs of mathematical functions – created by sweeping perfectly smooth 2D curves or lines through 3D space.

Each of the 3D primitives; pyramid, prism, cuboid, sphere, cone, cylinder and hyperboloid (like a cooling tower) is a perfect, geometric, solid block. All can be cut, drilled, glued and distorted, just like real blocks of plastic, metal, wood or stone. Complex objects can be made by sticking these building blocks together or by using one as a tool to cut into the other. If necessary a complex object can be used to cut

The second section of the animation has the 'earthlight' returning in more solid form to wreck the circle. The stones are animated separately to give a natural looking collapse, but several macros were used to automate the process. Some of the stones were moved with rotate or key frames to add a bit of variety to the moves.

REAL 3D
Available from
Alternative Image
0533 440041

material from other shapes, leaving an intricate 'negative' like the 's' shaped hole in a violin.

All of this construction work can be done manually, but *Real* has always provided a number of special 'combination' tools to automate the process. A Fence tool links rectangles together edge-to-edge; a Tube tool links spheres and cylinders alternately to make smooth bending tubes like neon signs; truncated cones are linked along a straight axis to form smooth Lathed objects with a perfect circular cross section. A lot of work has been put into adding useful new combination tools for the latest version. The most powerful new tool however is the conical tube tool, where

spheres are joined to make a tube, but the sphere sizes can vary and they are joined by truncated cones. The potential for robot fingers, tentacles, shells, buds and other organic forms is immense.

The addition of these new combination solid tools broadens *Real's* scope, but some objects with flowing, irregular lines are impossible to create from solids. So, giving you the best of both worlds: free-form modelling and point editing of faceted surfaces have been added. Typically, the method chosen is innovative and powerful, yet easy to understand and use. All free-form models are based on curves and meshes that are quite similar to the surface patches used by *Forms In Flight*.

A simple curve is created with a rubber banded line, adding new points onto the end of the curve with each left mouse click until a right click sets it. The curve can be left open or closed into a loop. A circular loop or a spiral curve can be made with the click of an icon. A mesh is created by sending one curve along the path of a second curve in a variety of ways so that irregular tubes, doughnut shapes, and even complex forms like a bath or bicycle saddle can be modelled complete in seconds.

Once the mesh is created to your satisfaction, it can be edited in a number of ways. Individual points or groups of points can be selected and transformed with any of the

The structure of the stone circles was completed quickly using simple rectangular slabs for speed of rendering. The first stone was repeated into the circle in seconds using a copy-and-rotate macro. This was repeated for the lintel stones and the smaller Bluestones. The larger Trilithons were copied and mirrored from one original. Bump mapping had to be applied to each stone separately to avoid similarity and used the 'Ball' mapping type because all sides are seen during the animation. The light is contained in a transparent sphere with a medium level of Turbidity and smooth surface to look like a mysterious foggy 'earthlight'. The light has an orbit path that moves it up from the centre of the circle, through the earth's surface, up about 20 feet and then zips off rapidly, parallel with the ground. The varying speed is controlled by the distance apart of the points that make up the orbit.

L **HOW 3D GRAPHICS PROGRAMS WORK**

There are two stages to creating a picture with any 3D graphics program: modelling and rendering. Modelling comes first, and simply means creating all the objects you want to put in your picture.
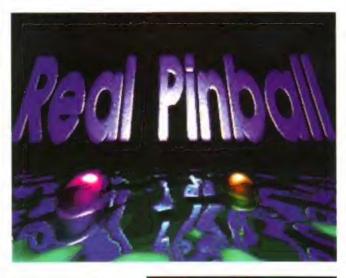
All objects are stored as 3D co-ordinates: so if your object was a cube, you'd store co-ordinates for the six corners. Most 3D programs give you a fixed set of basic shapes called 'primitives' (balls, cones and cubes) which you then join together or bend and distort to make your objects.

Objects are just wireframes, but Rendering puts surfaces on your objects so that they look solid. Ray-tracing, as in *Real 3D*, is the most sophisticated form of rendering: it uses extremely complex mathematics that work out how light would bounce off the surfaces, giving very realistic or interesting results.

BUMPMAP ANIMATION

The most important is 'Bump' mapping. When selected for a material, the red level of each pixel mapped on the surface determines the apparent height or depth of the texture at that point. At normal Amiga resolutions *Real* has caught up with the excellent rendering capabilities of *Imagine* and is faster.
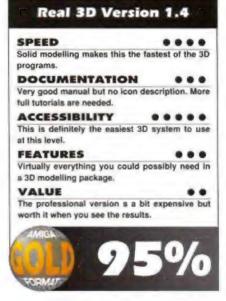
For 24-bit rendering *Real* has an edge because it is fast. Speed is important for fine tuning an image and trying lots of variations of ideas. Like *Imagine*, *Real* slows down when you use transparent and reflective surfaces – and the new freeform models do drag the rendering down. *Real's* speed edge seems to be based on using Solid models.

Animation has always been a strong point with *Real 3D*. The system used is simple and intuitive yet very versatile, especially as the whole program is based on a hierarchical structure of objects to begin with. There are seven different animation methods which can be used on their own or you can add to them.

The simplest technique is to animate the observer using the Wireframe view. Here, simple gadgets allow you to zoom in and out interactively, recording your moves, frame-by-frame. This could be the only animation you use, or it could be used to add increased atmosphere and professionalism to a detailed animation of the objects in your scene.
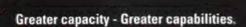
Real 3D is now such a complete package that it is difficult to find any major criticisms. There are a few minor bugs: setting an object to be unshaded tends to make it pure white rather than its set colour. The lack of a loading and saving warning can also be a major problem, especially if you are tired and careless – often the condition of computer animators in the wee small hours.

The manual is in need of full tutorials, especially for bump mapping. It is also time the macro was savable, it would be wonderful if several could be set up and assigned to 'F' keys and/or a 'macro' icon. When rendering, soft-edged shadows would help get away from the hard-edged computer look. But it has only one clear rival, *Imagine*, but *Real 3D* is much easier, and certainly more fun to use. I know what I will be doing in the New Year... AF

WET DREAMS?
The water in this sequence is perhaps the most effectively animated water ever seen on the Amiga - and it was amazingly simple to do.
Bump mapping in *Real 3D* takes the red value of each pixel on the mapped IFF brush and uses it to determine the height or depth of the bump. The transition from pixel to pixel is graduated smoothly, hiding the squareness of pixels.
A small brush (20x30 pixels) of random dots was produced in shades of pure red. The palette is a gradient over the 32 lo-res colours from black to red and back to black. To animate the bumpmap the brush was picked up and saved 30 times. The only difference between the frames is that the colours were cycled once for each brush.
The effect is that the level of red in each dot ramps up to full red and then down to black during the 30 frame sequence. When enlarged greatly within *Real 3D* each dot makes a smooth transition from trough to wave and with a reflective surface looks very much like water. By changing the level of red sequentially frame by frame the bumps get higher and lower like real waves. Simple, really!

Modify tools, and curves and meshes can be joined or broken, opened or closed, sub-divided, remapped or 'smoothened'. (Sub-division adds extra points to a curve without changing it, remapping adds points allowing a jagged curve to more closely fit its ideal 'spline' curve, and 'smoothening' removes or moves points that disturb an otherwise smooth mesh.) Remap is immensely powerful because it allows objects to be constructed with a coarse, blocky structure for ease of manipulation and memory saving, then adds points for a smooth appearance when rendering. Whole objects or curves can also be 'bent' using one of 24 different bending functions.

Overall the new freeform modelling tools, added to complement the powerful solid modelling system, surpasses other packages, even some that specialise in surface modelling. The only criticism is some functions that are supposed to be real-time are a bit slow on all but the most powerful Amigas. It is a professional package however and 3D modelling will always require the fastest machines available.

The early version of *Real* was very fast at rendering, but the final images didn't really compare with *Turbo Silver* or *Imagine*. The Material Requester though, now has control over specular reflections, and the 'fogginess' of a transparent material, as well as several sorts of surface mapping, and colour gradients.

BEND AND SHAPE
These are just some of the 24 ways in which you can bend an original shape to produce the effect you want.
All objects in *Real 3D* are created from primitives which you manipulate and change.

Real 3D Version 1.4

SPEED ● ● ● ●
Solid modelling makes this the fastest of the 3D programs.

DOCUMENTATION ● ● ●
Very good manual but no icon description. More full tutorials are needed.

ACCESSIBILITY ● ● ● ● ●
This is definitely the easiest 3D system to use at this level.

FEATURES ● ● ●
Virtually everything you could possibly need in a 3D modelling package.

VALUE ● ●
The professional version s a bit expensive but worth it when you see the results.

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3D graphics give you accurate and stunning pictures. But if you've got a dead flash 3D modelling package you're going to be a bit miffed if your work has jagged and bitmapped edges. **Brian Larkman** finds a way to go straight with...

CURRENTLY, computer graphics is forced to support two different ways of representing the world. Bitmap painting is easy to use and understand, and fits in well with the dot-based printers most of us use. It also carries a penalty - jagged edges and blocky enlargements! Vector graphics is more difficult to use, but has a wonderful range of transformations and prints at maximum resolution of the printer.

Working in 3D, vector graphics are essential, but at times, bitmapped images have to be used, especially for objects with complex outlines like logos. This schizophrenic state has produced a number of programs designed to bridge the gap between the two styles of image-making. The latest one for the Amiga is *Race Trace* from RGB Software. (No relation to RGB Studios, despite the images used here.)

The two previous bitmap vectorisation systems, *DigiWorks 3D* and *Pixel 3D*. *Race Trace* offers the full colour conversion of *Pixel* plus the line editing abilities of *Digiworks*.
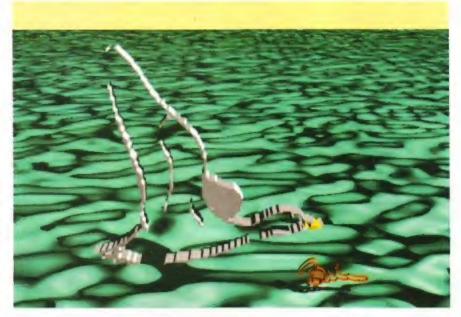
The key to success with all bitmap-to-vector conversion systems, is the selection and preparation of the bitmapped image. During conversion, the program creates vectors along every colour edge – so the image should have smooth boundaries. The best source of images is clip art that has already been made 'pixel-simple', for example the *Real Things* series.

If you must use your own images, an RIP (remove isolated pixels) tool helps to some extent. Nevertheless, digitised pictures and images that have used dithering to increase the number of apparent colours or to get shading effects, still cause problems. Careful use of the Blend and Smooth tools in *Deluxe Paint* works well, but ideally the vectorisation program should include some automatic bitmap smoothing and vector line straightening tools itself. *Race Trace* does not, offering manual editing instead. But we are going too quickly. Lets have a look at what *Race Trace* does.

As a 'tool' with a single-minded task, it should be straightforward. *Race Trace* is to an extent, though the editing tools take getting used to. On start-up you are asked what sort of file you want – IFF or RaceTrace – then given a selector to choose one. Only 32 colour, 320 x 256 lo-res images can be used, though other resolutions should be available soon.

The image is loaded to a blank screen and you trace an area or the whole screen. Next an 'alert' asks if you want to trace all colours or a selection. Choosing a selection brings up a palette box. Colours are selected by clicking on the image; it would be nice if they could be selected from the palette as well. A right button click starts the vectorisation. This is very fast, though crashes are not uncommon.

The problems with angular vectorisation are apparent in this image. The 'steps' behind the head and down the inside front of the body should have been smoothed, but editing would take hours and defeat the object of using a vectorising program.

Race Trace 1.0

Bitmap to Vector Conversion ■ £110 ■ RGB Software

Extrusion of the object is taken care of very effectively by Race Trace. As well as the problem with angular vectors, some coloured areas are not read correctly. The area around the horses' legs should not all be dark brown. (The original Horse brush used was taken from *Real Things Horses* produced by RGB Studios).

RACE TRACE
is available from
Alternative Image
0533 440041

The vectors will appear on screen in colour but at half the intended brightness. (During editing the 'active' polygon becomes brighter.) You are asked if you want holes to be detected. Holes in the bitmap (pixels in the original background colour) can be filled without affecting the background surrounding the object (a problem with *Pixel 3D*). The finished object is then ready to save or edit.

Editing can be a bit confusing at first. The non-standard icons, and the default automatic scrolling, zooming and centring take getting used to. The curious way *Race Trace* produces its vectors soon becomes apparent. All lines are horizontal, vertical or at 45 degrees. While this does speed up the conversion process, it defeat the object of getting rid of the pixels, leaving a stepped outline. This is the main drawback of the program, especially when compared to *Pixel 3D*.

Unwanted angular vectors can be modified with the range of editing tools provided. Any polygon can be selected with a right mouse click and points inserted or removed. All removed points can be restored with an almost infinite undo until a 'cleanup' command is issued. Similarly, whole polygons can be 'inactivated' until permanently deleted during cleanup. A curve can also be inserted between two points so a degree of smoothing can take place, but to do a whole image may take time.

Saving is easy and most file formats are supported including ProDraw Clips, Real3D objects, Sculpt scenes, IFF images, HPGL, PostScript (lines), and even the opposition DigiWorks3D format.

Race Trace is easy once you become familiar with it. Most tools have keyboard equivalents; the zooming, scrolling and centring system take a bit of getting used to and the infinite undo makes experimenting easy. Nevertheless you can't help feeling most of the work could be done automatically, and detailed editing done in the modelling program.

The program is nicely implemented but it is the final images are not what they should be, unless you spend a long time editing. Coupled with the massive files that it seems to produce, the verdict goes against *Race Trace*. Lets hope version 2.0 is more effective.

Race Trace	
SPEED	● ● ● ●
Very fast at the expense of sophistication	
DOCUMENTATION	● ● ●
Straightforward and informative.	
ACCESSIBILITY	● ● ●
Editor confusing to begin with, otherwise good	
FEATURES	● ● ●
Good apart from the need for edge smoothing	
VALUE	● ● ●
Good but version 2 will be available soon.	

Verdict 70%

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PC FORMAT

The next issue of *PC Format* is numbered, imaginatively, 5 and will be appearing on every good newsagent's shelves on January 23.

February 1992 • Issue Five

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RICHARD
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Bob — do your publisher I was wondering if I have to write any comments for the Work in progress page — Jane.

Martin — all of these are based on the same style of design and are two-page guides — Tim.

BOB — I'M TRYING TO DECIDE BETWEEN TWO PLAYABLE PREVIEWS, I'LL LET YOU KNOW WHICH IS BEST SOON — JASON.

For the finished version of all this and more, make sure you get issue 5 of *PC Format* on January 23

Stats and data. The mere mention of these two words can send people to sleep. But here's a utility to wake them up with its colourful and 3D approach to your annual figures. **Tim Smith** makes it as easy as pie.

IF YOU THOUGHT that chart and graph making was a simple process requiring no more than a calculator, a few coloured pencils and the will to make figures look good, then think again.

Charts & Graphs is the kind of heavy duty utility that takes a simple process and complicates it beyond all belief. This is mainly because there is so much to the program. For a start, the manual is a chunky 230-odd pages. It details everything from an excellent tutorial that takes you from step zero, what actually to do when confronted by the forbodingly blank working screen, to step lots, called Making a Borderless Transfer Slate!

And thank heavens for this section of the manual. Because, unless you are somehow telepathically linked to the art of making charts, this program does little to help you along.

Essentially you are faced with a working screen that bears more than a striking resemblance to a spreadsheet. Clicking on the right mouse button brings up the menu options. These are Graphs, Display, Drawing and Attributes. Once you have your data entered into the spreadsheet look-a-like (or loaded from disk), these options come to the fore.

For example, in the case of the normally rather dull bar chart, you can decide to use IFF format icons (Brushes) such as little Amigas to denote the relative values you have defined for your graph. Any IFF images in fact, could be used for this purpose; and at last it becomes clear as to the true use of *Charts & Graphs*. There is no way, with all of these options, that you could ever again show those clients a dull looking set of figures.
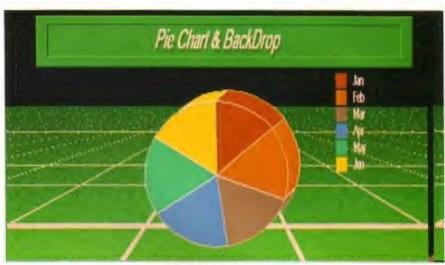
There is even a colour Postscript option that was added at the last moment which means that you can produce truly professional looking work if you do have access to a PS-compatible printer.

Once you have got bored with simply over-laying small icons on to bar charts, you might like to provide your work superbly rendered. Loading these is as easy as the Brushes, just click on the Graphs menu at the top of the screen and the rest is child's play.

If bar charts are not your favourite way of having fun with figures, that's no problem to *C & G* either. You can choose from pie, line and column set-ups. There are also four colour options to choose from depending on your sense of aesthetic and, more importantly, on the ability of your printer to cope. These four options are: 16 colour, eight colours, four colours and two colours.

The pies are undoubtedly the flashy end of the market here. You have everything at your disposal from backdrops to 3D rendering. Creating the basic data for a pie chart is the

Charts & Graphs takes the spreadsheet format up a level. Treating dull numeric data as an art form rather than just a simple exercise in graph making. But will you ever need this amount of options more than about once in a lifetime?

Charts & Graphs

Charting and graphing utility ■ TRSL ■ $49.95

Just when you thought that chart and graph making could not be advanced any further, along comes 16-colour, 3D pie charts and bar graphs that use of icons to jazz up a dry set of figures.

CHARTS AND GRAPHS is available from American Software Distribution 010-217 3842050
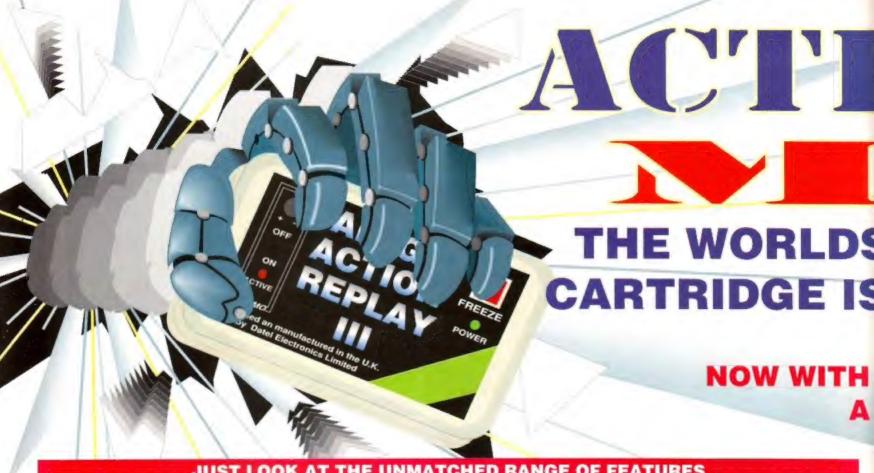
same as any other: just type it in at the initial work screen, but unlike some reviewers, do remember to save it as a data file as soon as you are happy with it. The program then deals with the data. Not only will it form it into neat images, it will also calculate it. Yet again a hint that this might be a glorified spreadsheet leaps to the mind; but no. The only calculations that *C & G* carries out are those needed by itself to construct the graph or charts.

Unlike a spreadsheet though, you will not be able to use exponentials, or geometric operands. You can, however, add as well as subtract column values in order to create new columns of data. *C & G* also comes with two

additional disks. These hold the example files and the clip art files. All files on these disks (save for the text) are in IFF format and they are targeted at tarting up your work. Images included on disk include bottles of aspirin, and all the credit cards you have ever lusted after in your life. These images can be used as backdrops or as brushes. There are also some example charts. These come full of legends (the small pieces of text which delineate the values and names given to the various pieces of data on a graph), interlacing line charts, and even a few ideas for creative constructions.

Generally *C & G* works well with very few major quibbles. It has a well-built feel to it which is nicely complemented by an impressive looking front and user interface. The whole thing could do with being a little friendlier – it seems to be aimed at the person who is used to working with a spreadsheet, which is a similar concept, but just different enough to give rise to irritating confusions. Aside from this quibble, if you have a serious need to produce more than one truly impressive graphic illustration of your sales figures a year, then *C & G* could fill a niche.

Charts & Graphs

SPEED ● ● ●
Zippy even on an unaccelerated Amiga, works with all models. One disk load

DOCUMENTATION ● ● ● ●
Excellent, in depth 113 page tutorial. But then again manual has to be faultless etc

ACCESSIBILITY ● ●
If you are a spreadsheet user you'll have a start, everyone else will need the excellent manual.

FEATURES ● ● ● ●
Extremely well featured, everything from 3D pie charting to Post Script printing support.

VALUE ● ●
This is an excellent package for professional presentations, but that's it.

Verdict **65%**

Since we gave you your own version of Gajits' Sequencer One last issue, you should be producing potential hit tunes by now. What? You need help? Well you're in luck. Here is the first in a series of workshops to help you start creating music in a variety of musical styles.

Style Workshop – Dance

YOU'VE NO DOUBT heard a lot of dance music being played these days. You hear it on the radio, on the television and in the charts. The most prominent styles of dance music, though, have to be techno and hip-hop. But how on earth do you go about producing this kind of music on your humble Amiga? In the first of a series of 'style tutorials' we hope to give you an insight into the methods and techniques used, so that you can produce your own dance tracks with *Sequencer One*.

All the tutorials in this series are designed to give you an impression of the techniques used in creating tunes in a set style, so we will be concentrating on the overall approach involved, rather than giving you a basic step-by-step guide. If we just told you what to do every step of the way you would only be able to create one song! Instead of this simplistic method, we will be outlining tried-and-tested methods for creating a style.

NO POP, NO STYLE

Modern dance music falls into two major categories: techno and hip-hop. Although there is a considerable amount of cross-over between the two, and both styles are based around a very percussive feel, they are in fact quite different. Techno has a very fast, and very aggressive hi-tech feel. Hip-hop on the other hand is a much more laid-back style, with a 'looser' feel, both in pace and sound. For this reason, this tutorial will be split into two different parts.

SUMMARY

As you will see, both styles are based around a solid rhythm pattern, but each has its very own distinctive feel. The examples shown here are by no means 'hard and fast' rules, since the whole basis of dance music is to change and adapt as other influences are assimilated into the music. However, these guidelines may be useful as you experiment with your own dance tunes. Move on up and get on down!

Techno

SOUNDS

The first thing you need to organise is the sounds that you wish to use. To create the main rhythm, you will need a bass drum sound, a snare drum sound and an open hi-hat. If you are using the *Sequencer One* samples provided, then the bass drum sample on this month's coverdisk is best, along with the snare and hi-hat sounds from the *Sequencer One* program disk given away last month. If you wish to use your own samples, then choose a low, flat bass drum sound with a lot of resonance to give a solid 4/4 rhythm. The hi-hat sound should be as clean as possible and the snare sound should be a tight, electronic sounding instrument.

As for other instruments, the Acoustic Bass sound from the *Sequencer One* disk fits the bill quite well. If you are using a MIDI instrument, try to use a low, ana-logue-sounding bass with a 'fat' sound. To add extra percussion, use a Kraftwerk-style electronic click to add an edge (Robodrum on this month's disk is just right).
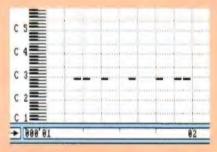
RHYTHM

The main thread of techno music is the fact that the bass drum simply hits on the four main beats of a bar, so set track one to play the bass drum, then go into the step editor. Keep the note type as eighth notes (two notes linked by a single bar) and place a note on the four main beats of the first bar.
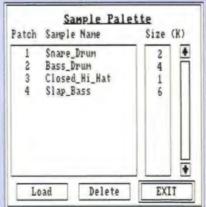
Go back to the main track screen and set track two to play the snare drum. Now the snare should have a much more staccato feel, and so the notes should be scattered across the bar more. Also, to achieve a tight,

Hip-Hop

SOUNDS

Although many records happily cross the boundaries of techno and hip-hop, the latter usually tends to be far less upfront and manic than its younger counterpart. For this reason you'll need some more traditional and 'laid back' sounds to play around with. Standard bass drum and snare drum sounds should be used, preferably ones that have a

Sample Palette

Patch	Sample Name	Size (K)
1	BASSDRUM.IFF	1
2	ORCHHIT.IFF	12
3	Snare_Drum	2
4	Acoustic_Bass	12
5	Open_Hi_Hat	7
6	ROBODRUM.IFF	1

Load Delete EXIT

Sample Palette

Patch	Sample Name	Size (K)
1	Snare_Drum	2
2	Bass_Drum	4
3	Closed_Hi_Hat	1
4	Slap_Bass	6

Load Delete EXIT

60s James Brown feel to them. A closed hi-hat is really useful for livening up the percussive track.

Also use a straightforward electric or slap bass sound for the main bassline and if you can get some vocal or turntable scratch sounds in there too!
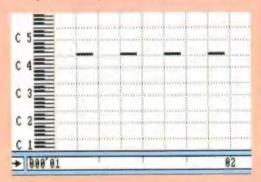
RHYTHM

One of the most popular rhythm styles in hip-hop is the 'Funky Drummer' riff – this is recognisable by the fact that there are more snare beats than there are bass beats! Start by setting up your bass drum sound and entering two eighth beats at the beginning of the bar and place further beats in positions four (one place after main beat two), six (one place before main beat three) and eight (the last position of the bar).

Next, set up a track to play the snare sound and go into the step editor. Switch to sixteenths and place a note on main beat two of the bar, then place notes at positions eight, ten and thirteen (which is that fourth main beat). For both the bass drum and snare, make sure that the notes play the sound at the normal pitch.

hi-tech sound, it may be worth playing the notes higher than you would normally play a snare sound. Go into the step editor and set the note type to sixteenths (two notes linked by two bars). Place a beat one place in front of the second main beat (three steps along) and one just after it (five steps along) and a scatter a few around the last two beats (but try to keep clear of the positions of the bass drum beats.
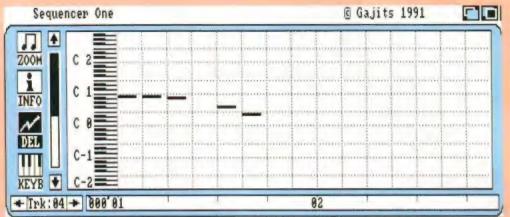
Now go back to the track screen and set track three to play the open hi-hat. Go to the step editor and select to play eighth notes, then place notes between the main beats of the first bar. This will give you the cyclic 'one-two one-two' feel that is darned typical of techno.

BASSLINE
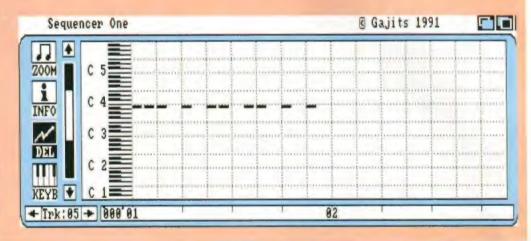
Techno basslines are usually fairly repetitive, something like 808 State's Cubik, so you only need to program a simple pattern onto the first bar. Other changes are generally carried out by changing the key of a bass pattern rather than programming a whole new set of notes.
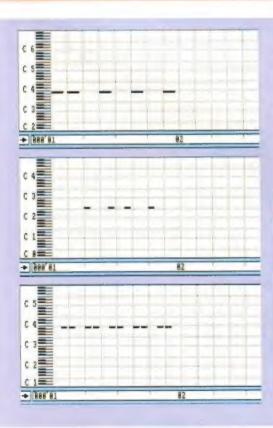
Set track four to play your bass sound and go into the step editor. The notes to be entered should either be eighth or sixteenth notes, to keep the rapid feel. Enter a pattern based mainly around a single key, but shift the notes up or down an octave occasionally to

add interest. Alternatively, keep the notes in a simple pattern, but play the last few notes slightly further down the scale so the bar 'trails off'. This will give it a more looped feel, making it easy to dance to!

To emphasise the bassline, set up the next track to play the electronic bleep or click sound, then go to the step editor and enter a series of sixteenth notes on short bursts of two, three or four. This will give the track a lighter, percussive feel and avoid making the track sound as though it is plodding along. One more thing – before you play the track, push the tempo up to about 130 bpm to give it more pace.
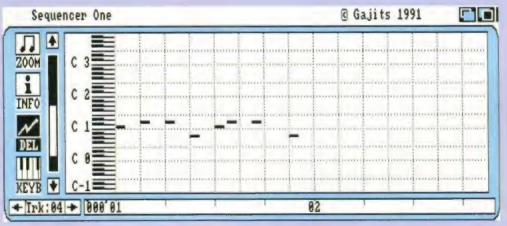
Now go back to the track screen and set up a track to play the hi-hat. Then go into the step editor and enter a space, place pairs of beats with a single space between them.

BASSLINE

Hip-hop basslines are much more straight forward than their techno counterparts, they in fact sound like they have been played by a bass guitarist. Set up a track to play the bass sound and enter a simple

melody in a low key (but not so low as to make the sound rumble). A good effect to try is to start off with long notes and then enter a few shorter ones at the end of the bar, with the last note being able to restart the riff.

After the main bassline has been entered, just slam in a few samples to add emphasis to the main beats of the bar. Turntable scratch noises are dead useful, or the electric guitar sample on this month's disk is real handy as well.

THE LOW-DOWN

We like to think that we offer you a good deal, and what better deal is there than some excellent software for next to nothing? Those interested in electronic music can now produce hit sounds using Gajits' *Sequencer One*. What's that? You'd like to go further than just using Amiga samples? Well you'd better buy a synthesiser then. What do you mean you can't afford one? Well, let's see what we can do... What about some of Roland's latest MIDI computer-music equipment? Aha! Thought that would get you interested!

Gajits Music Software have been in touch with those nice people at Roland, and have managed to lay their hands on some spiffy new equipment to allow you to get the most out of *Sequencer One*. Here's what you could win:

CM-300 SOUND MODULE

This is the very latest in Roland's Computer Music range, which has been specially designed for linking up to computer systems allowing you to get high-quality sound from your system. The CM-300's sound architecture is based around the highly successful (and incredibly impressive) Roland Sound Canvas system, so you'll be able to link your Amiga up to it and use *Sequencer One* to produce some great music.

You bought the Christmas edition of Amiga Format, eh? No doubt you're a whiz on Sequencer One by now. Wouldn't it be nice to have a synthesiser unit to use with it, though?

PC-200 MASTER KEYBOARD

If you're fed up with entering notes using the step-time editor and would like to actually play some music, then this is for you. The keyboard isn't actually a synth, but you can connect it to your MIDI set-up to allow you to record notes into a sequencer or control MIDI sound modules (such as the CM-300). Jools Holland eat your heart out!

HOW TO ENTER

So what do you have to do to win this gear? Well we want to hear just how good you are at using *Sequencer One*. On this month's Coverdisk there are some extra samples to add to the ones found on the program disk itself. What you have to do is put together a piece of music using ONLY these sounds. If you've got a bank of your own samples, then don't try and trick us by using them – we'll be checking! Just construct you're masterpiece using the given sounds, make a copy of the disk and send them in to us at:

Sequence Something Simple Competition.
Amiga Format,
29 Monmouth Street
Bath
AVON BA1 2AP

To give you a little more time to put together your potential hit, the entries don't have to be in until 29 February 1992 (that should be easy to remember).

The best piece of music will win the keyboard and sound module, with 10 runners up earning themselves a Gajits 'Take the Lead' T-shirt.

And a very big 'ta very much' to George Thorn at Roland for the donation of the main prize.

Well now you can win some lovely Roland equipment to create some top tunes.

Software Expressions

£1.00 per disk   £1.00 per disk

Introducing some of the best public domain & shareware disks available for the Amiga today. Go on...express yourself!

UTILITIES

U001	A-Gene (1MB)	Trace your ancestors
U005	Amibase	Excellent database system
U006	Amigazer	For those astrologists
U016	Biorhythms (1Mb)	Chart your feelings
U017	Business pack (3 disks)	D/base, s/sheet, w/p
U101	C64 Emulator	Take your Amiga back to basics
U114	Cross Dos	Demo Version
U020	C-Manual (3 disks)	Guide to C-programming
U092	Cartoon Brushes	Lots of famous characters
U024	Catalogue Maker (2 disks)	Good; be patient!
U098	Database Master	User friendly
U025	DTP Clip Art	For graphics enthusiasts
U033	Education 1	Learn German
U035	Education 3	Weather
U036	Education 4	Evolution
U104	Golf Recorder (1Mb)	Excellent, Recommended for golfers
U043	Intromaker	As it sounds. Good
U045	Jazzbench	Another good W/B alternative
U049	Mandlebrot Explorer	Excellent piccies
U050	Master Virus-killer	Recognises over 100 viruses. Essential
U106	Med v3.11	Latest sequencer version
U110	Messysid v2.0	PC to Amiga file transfer
U102	Multirippers	Plus Sanity and Pacman copy
U052	Business Card Maker	Simple, but useful
U099	Noiseplayer v3.0	Loads more modules
U053	North C	Compiler
U105	Personal Addresser	Useful
U108	Picture Help	Convert Ham pics
U061	Games Music Creator	Fav. composition writer
U062	House Samples 1	Loadsa samples. Suitable for GMC etc.
U073	Sid v1.06	Cli helper. Very popular
U075	Spanish Tutor	Bueno!
U071	Star Chart	For Astronomy enthusiasts
U076	Star Trekker	8 channels, sampler. Superb
U120	ST Emulator	Emulate Atari programs
U083	Workbench Fun!	More W/B alternatives
U103	Word Frenzy	Good wordprocessor
U084	Wordwright	For all you dizleqsicks!
U089	Journal	Very good account-handler
U111	Tarot (2 disks)	Amiga card reader!
U090	Text-editor	Also text-paint
U107	TSB Vector Designer	Special Brothers classic
U091	Chet Solace	Utils. extravaganza plus game
U093	Jamcracker	Songcreator from Vision. Well presented
U097	Red Sector demo-maker	Recent. Exc. disk
U115	Red Sector Extra	Fonts + objects for demo making
U116	Red Sector Extras 2	More objects etc
U113	Spectrum Emulator	Excellent
U112	Slideshow Maker	Good construction kit
U121	TAP Utilities 1991	Over 21 useful utilities
U040	Font Disks (4 disks)	Various fonts available
U109	Music Construction Kit	Lots of different utilities

DEMOS

D215	Another 5 ways to Kill a Mole	It gets sadder!
D015	Agatron Star Wars (1Mb/2 disks)	Captivating graphics
D016	Acid Music	Some wicked museec & grapheecs!
D017	Addams Family	Slideshow of TV series
D020	Bowie Demo	David Bowie of the past
D022	Budbrain Megademo (2 disks)	Still one of the best disks around
D021	Budbrain 2	The equally brilliant sequel
D023	Bass Megademo	Electrifying graphics & pulsating beat. Get it!
D027	Beastie Boys	Excellent presentation

D036	Coma/Cebit/Victory (1Mb)	Classic Acid-type demos
D048	Dream goes Berserk (1Mb)	Astounding graphics & imagination
D049	Desert Island slideshow	Gruesome pics. Good
D058	Enterprise Leaving Dock	Famous animation
D060	Elvira	The sexy lady endows herself!
D061	Elvira Activities	Now move her body!
D236	Evil Dead (2 disks)	Excellent stuff
D062	5 Ways to Kill a Mole	Funny. Not for animal lovers!
D063	Fillet the fish	The possible sequel to Puggs. A must
D064	Fraxion Fantasy	Gothic slideshow
D067	Fraxion Horror	Chainsaw macabre cartoon. V. popular
D069	Franklyn the Fly (1Mb)	Long cartoon on cute little Franklyn
D075	Girls of Sport	Pretty shots of talented girls
D083	Home & Away	Down-under disk
D092	Iraq Demo (1Mb)	Topical cartoon. Bush meets Saddam! Bang!
D099	Jesus loves Acid	Mindblowing music and graphics
D210	Kick Off 3	Good Music
D103	Legend of Billy the Kid (1Mb)	Long running animation. Good
D114	Mike Tyson anim	Well compiled
D117	Magician v2.0	Recently appraised animation. Recommended
D218	Mr Potato Head	Incapable dancer demo
D126	Neighbours	Slideshow from Ramsay Street
D128	Punk croc crew megademo	Now see Jason get shot Ha!
D129	Puggs in Space	Brill cartoon. Puggs finds it's a different world!
D146	Red Sector megademo (2 disks)	RSI's classic
D225	Reincarnation of Sgt. Pepper (2 disks)	Beatles classic
D148	The Run (1Mb)	T. Richter's car-chase animation. Good
D162	Stealthy Manoeuvres (1Mb)	Excellent demo
D166	Star Trek Animations	Anims. of USS Enterprise
D177	Star Trek Animations	Agatron no. 17. More like above. Good
D230	Star Trek Slides (2 disks)	From TV series
D189	Viz Slideshow	Fat slags & others in this slideshow
D226	Virtual World	Good
D028	Centronics	Demo compilation
D224	Invisible World	Digitized pictures of insects!
D250	Jimmy Hendrix Slideshow	Excellent music
D204	Sleeping Bag	Classic from Horizon
D214	Stamp Collector (1Mb)	Famous quality animation
D234	Taxi Driver (1Mb)	Good animation
D237	The Simpsons Demo	Bart at his best
D219	Walker Vs Amy (1Mb)	Astonishing

MUSIC

M001	808 State remixes	Four good tracks
M006	Batdance remix	Really good disk. Catchy stuff
M016	Depeche Mode	8 tracks of reasonable quality
M028	DJ Disco Leif's Hits	Really good presentation and beat
M032	Godbrain loves the world	Great acid-house musak
M086	Great Balls of Fire	Goodness gracious
M038	Hugo's Excentria	This has to be one of the best house disks
M039	I Love Technology	Recent production from Beatmaster. Good
M087	Iron Maiden	The Ides of March
M085	James Bond Remix	Catchy stuff
M081	Miami Vice	Theme remix
M080	Pet Shop Boys	The Manic Mix
M057	Powerpack 3 (1Mb)	Includes Vanilla Ice track
M059	Powerpack 5 (1Mb)	4 classy house tracks
M062	Random Access	Art of Noise and more. Startling acid track
M068	Sound of Silents	7 songs from Silents
M084	The Wall	Pink Floyd Classic
M088	500 Things Come Back Demo	Great Graphics & Music

GAMES

G001	Autobahn 3000	Control ball through tunnel. Hard
G004	Airwar	Fighter simulation. Good shareware game
G005	All New Star Trek (2 disks)	USS Enterprise classic. Best one
G011	Blizzard	Horizontal shoot-'em up. High quality
G013	Bullrun	War-game, based on US Civil War. Control Army
G014	Adventure Solutions (2 disks)	Loads of hints of commercial games. Good
G114	Buck Rogers	Shoot-'em up
G099	Cabaret Asteroids	At last a brilliantly playable version
G015	Crossfire (1Mb)	Excellent game written in AMOS
G019	Dungeon Delver (2 disks)	Difficult adventure quest
G021	Demolition Mission (1Mb)	Similar to Balloonacy, good fun
G136	Empire	Exellent role playing game
G022	Escape from Jovi	Guide ship to safety. Simplistic graphics
G029	Flaschbire	Old favourite. Get to alarm clock
G140	Games Galore 9	Latest compilation of several games
G031	Gravattack	Control spaceship, picking up keys
G038	Jeopard (1Mb)	Risk-type strategic game
G040	Holy Grail (1Mb)	Text adventure
G110	Ladybug	Pacman type game
G043	Learn and Play 1	Good for the kids. Blackboard maths. etc.
G050	Master of the Town	Use mouse to smash windows. Very addictive
G049	Megaball (1Mb)	Excellent game. Improved version of Breakout
G055	Mechforce	Strategy game
G056	Monopoly	Board game on disk
G124	Napoleonic warfare	Good simulation
G059	Nethack (Fish 460)	Good adventure game, recently appraised
G135	No Mans Land (1 meg)	2 player shoot up
G061	Pick up a puzzle (1Mb/2 disks)	Fit the pieces. Good for the kids
G062	3D Pool	Control cue with mouse, and it's all pot luck!
G063	Pacman	The classic game still here
G060	Pipeline	Build an oil pipeline
G065	Pixie Kingdom (2 disks)	Tricky adventure game. Good
G137	Scate Tribe	Scateboard game
G077	Seven Tiles	Excellent speedball game from Alpha
G102	Simulations	Metro, Amigoids, Imperium and more
G076	Star Fleet	Excellent shoot 'em up
G134	Star Trek (3 disks)	The original version
G072	Star Trek: Next generation	Not as good as G005
G115	Survivor	Role play an alien
G100	Towers of Hanoi	Text adventure
G079	Treasure Hunt	Find the hidden treasure. Good graphics
G081	Trek Trivia	Test your Star Trek knowledge
G083	Wooden Ball (1Mb)	Score three goals to win
G084	Wet Beaver Tennis	Simple, but good fun bat & ball game
G086	Wraithed One	Good general knowledge quiz
G088	Pair Crazy	Match the piccies
G094	Zeus	Simple puzzle game
G096	Assassins games comp.	Very good. Includes Tanx and Amigoids
G098	Battleforce	Control battle of robots
G097	Tomptespelet	Speedball game
G130	Battle Pong	Table Tennis Clone
G132	Darkstaff	Adventure game
G125	Attic Attac	Kill ghosts with axe
G133	Escape	Excellent graphics
G127	Games Galore 8	7 games incl Space War & Missile Command
G126	Pom Pom	Bomb Pearl Harbour etc
G131	Tom Cat	Shoot 'em up
G085	Word Search	Good puzzle game

PDUpdate

What's it all about then **Pat McDonald?** Well this issue I've gathered together the best in PD utilities: fab little games, educational stories for the kids, spreadsheets, virus checkers: just read on dear reader.

DIGITAL ACCESS 6
DIGITAL ACCESS

Yet another magazine on a disk, this time with an easy approach and a diversity of ideas. *Digital Access* was formerly *The Disk*, but underwent a name change due to two disks being bundled for £2.50 rather than just one. It's nice to see someone's got some common sense.

Nuke is autorun at first to see off any lurking viruses. This should prevent the *Saddam* virus knobbling the production again. After that, two disks of varied and useful material remain.

Games wise, there's *Leap*, a small but diverting little number roughly along the lines of *Jumpin' Jack* (move up the screen through gaps which appear from time to time). It's got quite a fine control method and takes ages to attain any proficiency at the game.

Also available is *Escape*, a simple but original offering. Moving from safe square to safe square, you have to avoid staying too long on tiles which vapourise as you move across them. The pace goes from an incredibly simple first level to a fiendish second, and the third is a real twister. After that, I don't know.

On the utilities is *Agnus Finder*, which tells you what model of the Agnus chip is currently fitted to your Amiga; *DML*, a hex memory editor useful for techie browsing of a computer's memory; a file editor (like a word processor but less sophisticated); and a disk copying program – better than the AmigaDOS Diskcopy command but far short of perfect.

Also included is a batch of articles, ranging from building your own autofire switch or printer lead, to copying printer drivers and an explanation of Guru numbers (crash routines). The angle is on using Workbench 1.3 rather than the latest 2.04.

That aside, there's a whole stack of other things of note on this disk that I have not mentioned. Although no one thing is gloriously useful, there's quite a lot of detail about lots of different subjects. Broadens your horizons a little, and as with all disk magazines they tend to get better as the series progresses.

Have you ever wanted to have a multitasking view directly into the computer's memory? *DML* will do this.

STORYLAND 2
AMIGANUTS 1206

The basic principles of *Storyland 2* are easy to grasp – choose a toy to help you in your quest. No matter what, you'll pick the right one in the end.

This is a very different sort of educational program. Starting from the innocent question "Do you care for animals?" it progresses on into a fun pastime for those aged seven-to-nine, with a little parental guidance.

The basic plot is that you have to use toys in a bid to rid some Never Never lands of a witch problem. The tasks range from colouring in animals with a set of felt-tipped pens to proving that you're worthy of entry into Toyland (forget your Ted and you don't get in).

From a child's perspective, all would appear to be well. Yes, you do have to use the keyboard occasionally to type in a magic-spell word to travel (researched from the story book toy in the game). The game pauses at these points.

Technically speaking, it's very original on the design side, with a cute start (a letter personally addressed to you) and controlled mainly by the mouse. A few icons could have sorted out most of these but the magic spell would still have to be typed.

From a parent's point of view, it's a nightmare scenario. The game is released by the Epping Forest Animal Rights group, and takes great pains to gain a child's interest. At the end of the game, a message

The most novel section in *Storyland 2* is *Toyland*, where you are faced with a series of grey, scrawled on pictures. By using a magic rainbow rubber via the mouse, the graffiti is removed and the colours of the picture restored. Simple but very effective.

appears, explaining that the bad guys in the story are fake but there really are animal experiments going on, doing nasty dissections and vivisections.

If you want to end up explaining these terms to your child, fine. The game does not. It entertains for a while, leaves some disturbing doubts, and is best scene as an amateur production of a much greater idea. Cute, but try before you let loose.

VISICALC
17 BIT 1479

It's getting hard to be nostalgic about what you find in the Public Domain, but at long last a spreadsheet turned up. What an ugly duckling it turned out to be. *VisiCalc* is a port of a very old style of spread sheet, demanding lots of keypad usage and explaining them in odd accountant-speak terms.

There are plenty of people who are actually used to this sort of thing but have found little available at so cheap a price. *VisiCalc* may be old fashioned but it does the job. If you want to work out complex problems based on simple maths (budgeting, forecasts and so on) you might find *VisiCalc* to be quite invaluable.

It may take you a while to get into the program. The documentation is thorough, but a little bland, and a couple of test runs are needed to see the ins and outs of the procedures. But it's all there, and it works, nice one Robert Bond.

Visicalc may use the keyboard extensively, but at least you can get a listing of the commands and what they do.

TOO SEXY UTILITIES
17 BIT 1466

It's good to see more and more utilities being released on the Amiga, especially in a simple form of icons on a Workbench disk. Of major consequence is John Veldthuis' newish *Virus Checker V5.26*, a program with an unsophisticated front end but bang up to date at catching viruses. It's set to run as the disk starts.

Also of note are *Recover II*, a damaged file recovery program; *SysInfo 2.28*, which gives a diagnostic report on what's plugged into your system and has

Continued on Page 170

been included on this month's coverdisk; *ShortCut*, an excellent program launcher which can add a menu to the Workbench screen of programs that you commonly use; and *AIBB3*, is a benchmarking program for comparing speeds between different Amiga systems. The last program appears to be fairer than many others.

Without going into detail, there's tons more material on this disk: some game cheats, Workbench Hacks, label printers and similar paraphernalia. I found little of it to be familiar, which is what makes the disk special.

MCAD V1.2.5

As set up, mCAD is really only useful for detailing electronic schematics. With some work in creating the basic building blocks, you could draw virtually anything with it.

17 BIT 1480

I've been hoping to see this for a while, as CAD (Computer Aided Design) PD programs are rare. I'm not convinced it's the best there is, but it can be used for a variety of simple design chores.

It relies on grouping lines, boxes and curves, to form the basic building blocks for technical drawings. As configured in this version, mCAD is really just for designing electronic schematic diagrams.

Having said that, though, if you were to spend the time and effort you could design just about anything which fitted on the design paper. The biggest fault of *mCAD* is that it has no zoom mode (most CAD programs let you design on different scales, so that you can design to the technical accuracy that you want.

It's a shame that it turned out to be quite limited, but *mCAD* still has its uses. Running in 16 colour interlaced high resolution graphics is a pain on a TV, but if you're just a humble Amiga user you could still find it to be of use.

RIM DATABASE
17 BIT 1481

Relational Information Manager – I think that's what it stands for. This incarnation of what is basically a database is very hard to fathom – all of the explanation appears to have been either hidden or removed.

RIM is very slow because essentially it is relational in nature. From simply moving from command mode

Deep and dark is the best way to look at the *RIM* database. It's undoubtedly very powerful, but unless you know a bit about relational databases I'd give it a miss.

to explanation mode takes an age. *RIM* was ported from a different computer using *Fortran*, which could explain a lot towards why it's so odd.

More precisely, relational databases treat information as being interrelated connections rather than masses of data. *RIM* is certainly fussy as you conduct your investigations, with a terminal wait while it digests your later command for any form of error. It's best left to the students of this form of using a database – sort of an experimental program.

BUG BASH
AMIGANUTS

OK, so this one isn't strictly speaking PD, but there haven't been many releases and it's the next best thing. *Bug Bash* will cost you a fiver, which some might consider exorbitant but it isn't bad for a game these days. With the whole works (programming, graphics and sound) done by one person, A R Cummins, it's hardly surprising the game has limitations. What is good is it's a simple, colourful blasting game.

Many will not like it, because the basic plot consists of cleaning up a garden by hand and getting rid of pests using chemicals. I don't care, it's only a game for goodness sake, and it comes into its own when you're after some fun during the odd break.

Bug Bash uses colourful graphics and simple gameplay to provide a modicum of fun. Don't expect too much, because it can be slow to respond to the joystick.

AMIBASE II
AMIGANUTS 1036

This is very good news. *Amibase II* used to in fact be licenseware, but now an upgrade to *Amibase III* is available. The old program has been re-released by the author (one Keith A Grant of KAG productions) as shareware. What this means effectively is that you can have a play with the old version, but before paying for either it or an upgrade to the new system. That's the best way to do it.

Amibase II is controlled directly through the keyboard, with the mouse seriously under-used. Having said that though, everything is signposted. If you want to try a quick, PD database that is essentially usable, then get this program.

ASSASSIN'S PRINT UTILS
17 BIT 1468

There's a colourful character called the Assassin? So long as they produce compilations as good as this one that's fine by me. If you have an Epson compatible languishing without use, this disk could sort you out.

There's the inevitable floppy disk label printer, which is actually rather good: a name and address database for mailing lists and a program to keep track of your software collection, for finding out exactly what is on each disk. Simple tasks, but very useful.

MOD PRO V1.92
AMIGANUTS 1068

Steve Marshall's constant quest for the perfect music module player continues with the latest release of *Module Processor*. This program was designed with a unique view in mind – to be able to import music modules saved from different programs (*NoiseTracker*, *Med* and so on) and save them as executable files, ready to be played from disk. Most of the recent changes to *Mod Pro* have been necessary due to recent *Med* and *OctoMed* updates. If you're into compiling music disks, *Mod Pro* is very handy. The latest version can display IFFs while playing a module, although complex pictures can distort eight channel *OctoMed* files (it places a bit of a strain on the computer). Still, it's a great solution considering its problems.

If you want to set up your own music collections, *Mod Pro* can be very handy. It can read module types from several different programs (all of the mainstream ones in fact).

PD TOP TEN UTILITIES
PD SOFT

1)	Desktop Publishing – V390
2)	Spectrum Emulator 1.2 – V443
3)	Jetman – 2018
4)	Red Sector Vector Demo – L18
5)	Amicash – V392
6)	Air Warrior Flight Sim – 1984
7)	BootX Virus Killer 4.03 – V457
8)	Windowbench – V401 (Two disks)
9)	Pom Pom Gunner – 1977
10)	Printer Drivers Collection 3 – V444

GAMES

PG001/2 ADVENTURE SOLUTIONS 2 disks full of adventure solutions! (2)
PG003 AIR WARRIOR This is a flight simulator program
PG004/5 ALL NEW STAR TREK Great game from Tobias Richter! (2)
PG006 ANTEP & SLOT CARS A graphical role playing game & a car game
PG007 APIDYA Nice demo of a horizontal shoot em up!
PG008 ASSASSINS 1 Tanx, Rollerpede, Avatris, Caverunner & Amigoids.
PG009 ASSASSINS 2 Girl action, Missile command Invaders & 3 more!
PG010 ASSASSINS 3 Megaball & Drip! Superb breakout game & platform game
PG011 ASSASSINS 4 Jumper, Gomoku, Cracker, Jumpy, Turbo duel & Klondike!
PG012 ASSASSINS 5 Raid, Go Looly & Retaliator. 3 shoot em ups
PG013 ASSASSINS 6 Downhill challenge, Pacman 87, Meta Llamas & Welltris
PG014 ASSASSINS 7 Destination Moonbase, Trix, Mightworks & Clauds runner
PG015 ASSASSINS 8 Air ace II, Hball, Number Fumbler & Snakepit!
PG016 ASSASSINS 9 Battle pong & Blizzard
PG017 ASSASSINS 10 Escape, Pipeline, Pickout & Sys!
PG018 ASSASSINS 11 Dad, Connex, Towers of Hanoi, Reversi & Trippin!
PG019 ASSASSINS 12 Llamatron, Car, Powerpong & X F 1!
PG020 ASSASSINS 13 Ball, Asteroids, Twinris, Block it, Squamble & Amigatration
PG021 ATIC ATAC A conversion of the old classic Spectrum game
PG022 AWESOME PREVIEW Fantastic preview of a great game!
PG023 BATTLEFORCE A strategy war game similar to Mechforce
PG024 BLACKJACK A really good version of the game! +
PG025 BUCK ROGERS A nifty little shooterup from the C-64 days !
PG026 CASTLE OF DOOM Nice graphic adventure game +
PG027 CHINESE CHECKERS Computer version of the popular board game +
PG028 COLOSSUS & WORLD Two very good adventures from Software distillery +
PG029 CROSSWORD COMPILER Nice program for making crosswords! +
PG031 DARKSTAFF A spectrum emulated text adventure game +
PG032 DRAGONS CAVE Great Dungeons game, nice graphics!
PG033 ED 209 Robocop style shoot em up! +
PG034 ETERNAL ROME & DOMINOES 2 nice games on this disk
PG035 ENSIGNIA MAZE Nice little maze game allows 4 views of maze at once
PG036 FLASHBIER Over 200 levels in this boulderdash type game
PG037 FRANTIC FREDDIE Classic platform type fun with good music
PG038 GALACTIC FOOD FIGHT Fight through ice cream cones fruit etc
PG039 GAMES GALORE 1 Drip tiles Quix Q&X invaders Chess Yahtic Othello
PG040 GAMES GALORE 2 Welltris Skyfight Bouncer Jackland Larn Bluemoon
PG041 GAMES GALORE 3 Gravattack Asteroids Pingpong Miniblast Orbit 3d
PG042 GAMES GALORE 4 Mr Munk Diplomacy Car Mutant Chess Egyptian run
PG043 GAMES GALORE 5 Cosmo Car & mouse Mazeman Rollon Trivia Pharoah
PG044 GAMES GALORE 6 Tint Jumpy Def ATC C-Robots SinLine King rats SB
PG045 GROWTH Brilliant game you must shoot the fauna!
PG046 HACK Great text adventure in the Infocom style! +
PG047 HOLLYWOOD TRIVIA Nice trivia game with lots of questions! +
PG048 HOLY GRAIL A nice text adventure, one of the best +
PG049 JETMAN remember the old game jetpac ? Well here it is ! Mega!
PG050 JEOPARDY Version of the board game. Nice! +
PG051 KILLER CARS A great car game with filled vector graphics ! +
PG052 LAMER GAME Similar to operation wolf shoot em up. +
PG053 LARN Another very well regarded text adventure game +
PG054/55 LEARN & PLAY Great fun for the kids on two disks -(2) +
PG056 LASERZONE Great old 64 classic shoot em up!
PG057 LEAPING LARRY Simple platform game done in Amos
PG058 LETTRIX Nice puzzle games similar to Tetris!
PG059 LORE OF CONQUEST Exellent space trading game D&D style!
PG060 MARBLE SLIDE Puzzle game, build slides up!
PG061 MASTER OF THE TOWN Shoot the baddies in this game
PG062 MENTAL IMAGE PACK 3 great games Gridrunner Invaders & Rebound +
PG063 MORIA Text adventure based around Dungeons & Dragons theme!
PG064 NAPOLEONIC WAR SIMULATOR A nice strategy type game +
PG065 NESTOR CARD GAME Another card game, looks quite good!
PG066/67 NETHACK Dungeon & Dragon adventure style game, very popular! (2)
PG068 NO MANS LAND Hi tech war games shoot em up. +
PG069 NU GAME Shoot em up with good graphics, quite difficult!
PG070 PETERS QUEST Rescue the maiden in this fun platform game +
PG071 POM POM GUNNER Blast the enemy aircraft in this Beached clone +
PG072 PROPERTY MARKET Become a millionaire before you retire at 65
PG073 RAPHAELS REVENGE A turtles game done in SEUCK!
PG074 RETURN TO EARTH Nice type space trading game! +
PG075 RINGS OF ZON Interesting shareware adventure-strategy game
PG076 SEVEN TILES Superb futuresports speefball type game. Great!
PG078 SCUM HATERS Shoot em up done by Brazzle Atkins in SEUCK!
PG079 SEALANCE A submarine strategy game seems very involved +
PG080 SERENE SHOOT UP Another good quality Shoot em up !
PG081 SERENE II Follow up to the above game
PG082 SIMPSONS GAME Vertically scrolling shoot em up done in SEUCK!
PG083 SPLITTING Puzzle game, rearrange Ronald Reagans features!
PG084 ST BASH Blast the Atari Sts in this fun invaders game
PG085 STARFLEET Nice little game done in SEUCK!
PG086/87 STAR TREK The US version by Jim Barber, very good (2)
PG088 STAR TREK NEXT GENERATION Strategy game runs in Hires 1mg +
PG089 STAR TREK THE SHOOT EM UP Yes a SEUCK version of game. +
PG090 SUBCULTURE Playable 1st level of a good shoot em up!
PG092 SWIV DEMO Superb demo of an exellent shoot em up!
PG093 TENNIS A good shareware tennis game! Nice!
PG094 TRAIN CONSTRUCTION KIT make your own track layouts!
PG095 TREK TRIVIA For you Star Trek freaks, loads of questions!
PG096/97 TRUCKIN ON A trading game based around truck haulage (2 disks)
PG098 TURRICAN 2 PREVIEW Great demo of superb shoot em up!
PG099 THE EVIL DEAD GAME Blast the goolies in this crazy game
PG100 THE JAR Very nice little jump & run game.
PG101 THE INSIDERS CLUB Stocks & shares game, see how far you get
PG102 WATERMINES Nice boulderdash type game
PG103 WET BEAVER GAMES Version of the old pacman game!
PG104 WONDERSOFT GAMES Golf, Congl, Missile, Trillion, Windmill etc!
PG105 WIZZYS QUEST A very good arcade adventure game from Germany +
PG106 YELP Nice little painter type game! +
PG107 ZEUS A very good & popular block puzzle game +
PG108 ASSASSINS 14 New Pack, China Challenge II & Amiga Columns!
PG109 TOMCAT Nice vertical scrolling shoot em up! +
PG110 SUPER SKODA CHALLENGE Nice new car racegame! +
PG111 MIDNIGHT THIEF A nice text adventure game!
PG112 ULTIMATE CARD GAMES Cribbage,Hearts, Bluemoon,Patience & Solitairs! +

Note: Funpack 1-17 in stock, plenty of great value PD games which WILL work on the new
Amiga 500 Plus! Phone for details !

UTILITIES & SERIOUS SOFTWARE

PU001 AMICASH Brand new bank management program. very easy to use. +
PU002 A-GENE Good geneology program, to trace your family name. 1meg. +
PU003 A68K 68000 Assember program for the Amiga either difficult to use.
PU004 A64 EMUL-TOR! Commodore 64 emulator program + some basic listings!
PU005 AMATEUR RADIO 1 Some programs of interest to the radio ham! +
PU006 ANIMATE POINTER PACK Disk full of animated pointers!
PU007 AMIBASE 3.76 One of the best Amiga databases. Search facilities +
PU009 ANALYTICALC Now unpacked and ready to use! (2 disk version) +
PU010 ARP 1.3 Amigados replacement project, contains new libraries & more !
PU011 ASI LABEL PRINTERS All the best label printing programs on 1 disk +
PU012 ASSASSINS GRAFFIX UTILS Disk full of graphics convertors etc. +
PU013 ASSASSINS BOOT UTILITIES Loads of bootblock utilities for here +
PU014 BANKIN A complete cheque book analysis program. Keep tabs on cash +
PU015 BIORYTHMS & STARCHART Check your Biorythms & examine the night sky! +
PU016 BUSINESS CARD MAKER Make your own with this useful utility. +

PU017/20 C MANUAL II (4) New and better ! Version 2 now comes on 4 disks! +
PU021 C-LIGHT RAY TRACER A commercial ray tracing package. Now PD !!!!
PU022 CHEMESTHETICS Chemistry program for molecule display etc! +
PU023 CHET SOLACE UTILS 26 utilities on this disk.
PU024 CLERK Another program similar to account, manages your bank account.
PU025/32 CLIPART 8 disks crammed full of some of the best clipart around!
PU033/35 COUNTACH CLIP ART (3) 3 disks packed full of clipart ! Various +
PU036 CURSER BASIC COMPILER Just what you need to speed up basic programs +
PU037 D-COPY One of the best PD copy utilities available, easy to use. +
PU038 DARKSTAR UTILITIES 3 A disk full of assorted useful utilities
PU039 DBW Good PD ray tracing program now on pictures ! CLI Knowledge.
PU040 DEMOLISHER UTILITIES Loads easy to use utils something for everyone +
PU041/43 DESKBENCH Nice alternative workbench icons - bases (3).
PU044 DESKTOP PUBLISHER From Germany, English translation now available. +
PU045 DIRECT ACTION A useful Utility for editing animation sequences.
PU046 DISKMASTER 3.0 CLI Utility program, copy files, delete, format disks.
PU047 DOPE INTROMAKER Make your own intros with this utility.
PU048 DYNAMITE FONT 1 Another popular disk. Stacks of IFF fontscreens.
PU049 DYNAMITE FONTS Exellent fonts disk for use in Dpaint etc
PU050/54 EDUCATION SET (5) Five disks full of educational programs. good +
PU055 ELECTROCAD PREVIEW If your'e into circuit design try this now V1.4! +
PU056 EXILE FONTS More of theses superb fontscreens. For use with DPaint +
PU057 FLEXIBASE DATABASE A simple to use database for the beginner +
PU058 FONTS & SURFACES Lots of useful fonts brushes etc for use in Dpaint! +
PU061 GENESIS DEMO Superb fractal generator, really good!
PU062 GRAPHICS UTILITIES Load of useful graphically orientated programs. +
PU063 HAMLAB Convert VGA PC pictures to Amiga ham mode with this utility. +
PU064 HARDDRIVE UTILS Some good utilities for hard drive owners. +
PU065 ICONMANIA Loads of programs for icon creation & many icons! +
PU066 ICONS This disk is just crammed with useful & varied icons. +
PU067 IMPLODER V4.0 Very good crunching program, very efficient +
PU068 INTERFERON PRO Create protection bootblocks against viruses. +
PU069 JAZZBENCH A great alternative workbench much preferred by many!
PU070 JOURNAL A nice program designed to keep track on your finances.
PU071 LANGUAGES DISK All you ever needed ! Forth, Modula 2, X-Lisp & Logo+
PU072 KAREN S METALLION UTILITIES Great util disk full of fonts & more! +
PU073/76 KING JAMES BIBLE Old testament & New testament & text reader (4)+
PU077 LANGUAGES DISK All you ever needed ! Forth, Modula 2, X-Lisp & Logo+
PU078 M-CAD Computer aided design package uses hires hi mode. Good. 1 Meg.
PU079 MACVIEW,DRAW,ROTATE Collection of three unusual programs.Good!
PU080 MESSY-SID Easy to use, PC - Amiga file transfer program, Brilliant
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PU082 MOBED A very useful program for editing sprites and bobs.!+
PU083 MORSE PROGRAMS Disk full of Morse code programs for radio hams
PU084 MYSTIX MARINE MODS Documents disk for hardware modifications.
PU085 NCOMM v1.921 Latest & best version of this exellent comms package! +
PU086/7 NORTH C 1.3 (2 a two disk unpacked version of above program. 1+
PU088 NORTH C 1.3 (Packed) The complete C compiler by Steve Hawtin !+
PU089 PASCAL COMPILER Now becoming a popular language. now available on PD
PU090 PC EMULATOR Software PC emulator needs MS DOS to run! CGA graphics!+
PU091 PENDLE EUROPA MEGAUTILITIES 1 An essential collection of over 200! +
PU092 PENDLE EUROPA UTILITIES 5 Another great compact by the Red Devil.
PU093 PENDLE EUROPA UTILITIES 6 includes copiers and more utilities
PU094 PENDLE EUROPA UTILITIES 7 A very popular utilities collection. Try it !
PU095 PRINTER DRIVER GENERATOR Design your own printer driver with this.+
PU096 PRINTER DRIVER UTILITIES Various non-standard printer drivers.
PU097 PRINT STUDIO V1.25 Great utility for accurate printout of pics.text!+
PU098 QBASE Database program, simple to use with full search facility.
PU099 QED A nice easy to use text editor program ! Load, save, print. +
PU100 QUICKBASE A small database program, also Xspell & Text ed on disk.
PU101 QUICKBENCH Another alternative workbench system, very clever this!
PU102 RAZOR 1911 Graphics rippers, Virus killers, Disksalv. powergader
PU107 RIM DATABASE Very comprehensive relational database program. Powerful.
PU108 ROT A simple 3D drawing package for your Amiga. Very popular +
PU109 SCOPE 114 Structured clipart for desktop publishing etc! Page etc! +
PU110 SCOPE 115 Structured clipart for use in Professional page ETC.+
PU111 SID V1.6 Newest version of the easy to use CLI utility. Essential !
PU112/3 SOMETHING FOR NOTHING 2 disk set full of video utils, fonts etc.(2)
PU114 SOZOBAN C Another very popular C enviorment, similar to North C
PU115 ST EMULATOR Run Atari ST software on your Amiga. Needs 2 drives
PU116 SUPER 'C' DISK As near to a hard drive as mere mortals get!
PU117 SUPERKILLERS Kills 166 viruses, more than Master Virus2.2. A must!
PU118 SUPER WORKBENCH Yet another alternative workbench disk
PU120 TEXTPLUS V3.00 One of the best wordprocessors. Includes Amigaspell. +
PU121/2 TV GRAPHICS Superb Dpaint backdrops and some great fonts. (2) +
PU123 UEDIT LATEST RELEASE !Word processing shareware program. +
PU124 ULTIMATE ICON DISK Contains Iconmeister,Iconlab,Iconmaster & icons! +
PU125 ULTRAPAINT v3 A nice paint package for IFF pictures! +
PU126 UTILITIES COLLECTION Another great collection of utilities about 100!
PU127 UTILITIES DISK 1 Another one for the collection. About 60 or more.
PU128 VECTOR DESIGNER A very comprehensive but difficult to use proggy.
PU129/30 VIDEO APPLICATIONS (2) 2 Programs for use with genlocks & videos!
PU131 VISICALC SPREADSHEET Simple to use spreadsheet program based on VC.+
PU132/3 WINDOWBENCH A Windows 3/Workbench3 lookalike, very nice. (2 disks)
PU134 WORKBENCH HACKS Disk full of amusing workbench hacks!
PU135 WORDWRITE WORDPROCESSOR Comprehensive wordprocessor with spellcheck-
er
PU136 ZX SPECTRUM EMULATOR Latest version now with sound too !
PU137 600 BUSINESS LETTERS contracts, letters, allsorts included ! +
PU138 LAST HOPE Recover files when you've just erased a valuable file ! +
PU139 GRAPHICS CONVERTERS Convert graphics from PC disks etc!
PU140 LITTLEBENCH At last a file copier etc for A500s (Dos 2 ONLY) 1 +
PU142 TAROT II A better version than the first one, on 2 disks! +
PU143 ORBUTH S ? Disk crammed with search utilities!

ANIMATIONS

PA001 AEGIS ANIMATIONS 3 anims, Juggler, Plane & Martyn. +
PA002 AGATRON 2 Misc - jet fighter landing , basic +
PA003 AGATRON 3 Star Trek - Shuttle fly past 1m +
PA004 AGATRON 5 Star Trek Klingon fires torpedoes 1m +
PA005 AGATRON 7 Star Wars Fighter doing loops etc 1m
PA006 AGATRON 9 Star Wars - Fighter fly by, impressive 1m
PA007 AGATRON 10 Star Trek - Enterprise in dry dock Good 1M +
PA008 AGATRON 11 Tron - Tank v Deactivator. Good vectors +
PA009 AGATRON 12 Tron animation Not one of the best +
PA010 AGATRON 13 Misc - Robo 1 A robot waving 1m +
PA011 AGATRON 14 Star Trek Workbee & Reliant. 3 shots
PA012 AGATRON 15 Lotus car, Billiards, & Jet Fighter animations! +
PA013 AGATRON 17 Star Trek TWOK animation Short but okay +
PA014 AGATRON 18 Star Trek - Enterprise fly by. Short anim
PA015 AGATRON 20 Huey 2 A helicopter leaving a landing pad. Neat. 1 Meg
PA016 AGATRON 23 Star Trek fleet manoevre 1m
PA017 AGATRON 24 Kuli pen animation & Ping pong. Great! 1m +
PA018 AGATRON 30 The run , a suberb car chase 1mg or over. 1m +
PA019 AGATRON 26 A ship rocking at sea, / enterprise leaves dock. 1m +
PA020 AGATRON 30 Contains Hyperspace animation & Landing animation 1m +
PA021 AGATRON 31 Anim of a Porche rising out of a table 1 mg.
PA022 AGATRON 32 Space - Space probe flying away 1m
PA023 AGATRON 33 Probe animation Bird of prey animation & Klingonhit! 1m
PA024 AGATRON 34 Star trek the space office - a bit short
PA025 AGATRON 35 Space- space probe flying away 1m
PA026 AGATRON 36 Star trek Bird of prey flying away. 1m, bo map. 1m
PA027 AGATRON 37 Misc - Tobias goes knackers! 1m
PA028 AGATRON ANIMS 3 great short looped animations!
PA029 APPLECUS ANIMATION Great anim of an abacus (applecus??)

POWER ANIMATIONS !

PP001 ? ANTI LEMMINGS (2) Absolutley brilliant animation ! Get this now !2M
PP003 AT THE MOVIES Cute anim from Mr Schwartz featuring Amy squirrel 1.5
PP004 7 AUTOMATED LIGHT (4)Fab battlestar galactica type animation. 3 Mb+
PP008 10 BUZZED (3) Great animation of a wasp crashing into things 3 Meg
PP010/12 DATING GAME (2) Superb new demo from Eric Schwartz. Get it. 3.5mg!
PP014/15 DRAGONS LAIR (3) Three meg power demo with sound effects. Great !
PP016 GULF WAR ANIM Find out what happens to Hussein! Brilliant 2mg!
PP017 JUGGLER II Juggler meets Ms.Juggler. Great following 1.5Meg.
PP019/20 LOST IN SPACE (3) Remember the old TV series ? This is it ! 2 Meg
PP021/24 LANDING (4) Tobias Richter Poweranim ! Superb ray traced stuff.4M
PP026/27 STATION AT KHARN (3) Animation of a a spacestation,nicely done. 2M
PP030/33 UPGRADE (6) Wow ! Camberwick Green meets the Amiga ! GREAT ! 5 Meg
PP034/35 VAUX KILLERS (2) An old but quite good 2mg demo 2mg
PP036/37 WALKER DEMO (2) The 2 disk 2meg version of this classic demo.
PP038/39 WAVE SAILING (2) A nice animation of a wave sailer! 1.5mg

DEMOS

PD001 AGONY DEMO Brilliant graphics in this game demo,show it to ST owners.
PD004 ALARM MEGADEMO Nice new demo with a good acid type video part +!
PD005 AMOS 3D DEMO Shows you some effects that are possible with 3d! +
PD06 ANALOGUE MEGADEMO A great intro & novel demo selection!
PD07 ANARCHY INSPIRATION IS NONE Brilliant demo with some superb ray trace
PD08 ANARCHY MADNESS II Demo with Bobs and Filled Vectors, superb music!
PD09 ANARCHY SYSTEM VIOLATION Classy demo featuring Vector Bob Gfs Cool !
PD002 ANARCHY DIGITAL INNOVATION Their latest and best demo, superb!
PD001 ANIMATORS MEGADEMO A nice new megademo from the Animators.
PD001 AURORA MEGADEMO Dramatic intro, good music with some Ham bobs! +
PD007 BASS MEGADEMO Great megademo with some house music.
PD007 BOB CRAZY A disk filled with Bob demos!
PD001 BRONX WHAT A RUSH Nice new demo. +
PD001 BUDBRAIN II Hilarious magademo, house music video & cartoon sketches
PD017 CASCADE MEGADEMO Curious demo with a puzzle and an acid part!
PD018 CHAOS ROCK A fantastic light show based on fractal patterns. +
PD019 COOL FRIDGE A plasma meagdemo, if you like these FX get this one.
PD020 CRIONICS MEGADEMO Includes the superb maddona demo and more !
PD021 CRIONICS NEVERWHERE Superb demo with a Real world demo and Madonna
PD022 CRIONICS TOTAL DESTRUCTION Very nice plasma Fx plus a kickin music !
PD023/25 ALCATRAZ MEGADEMO Exellent, a huge demo, comes on 3 disks! - (3)
PD026 CRUSADERS SPACE DELIRIA Fantastic music by Dr.Awesome & fab effects!
PD027 CRYPTOBURNERS HUNT FOR RED OCTOBER Lovely filled vector demo. Great!
PD028 DARKNESS MEGADEMO 2 Another unlimited bobs demo - Do they ever stop!
PD029 DANISH KNOW HOW A classic demo ! well worth getting !
PD030 DEAD DANCE THRASH Amazing thrash metal soundtrack & some wierd pics!
PD031 DEFJAM PIXEL NATIONS Nice multipart demo with plasma,bobs etc.
PD032 DEVILS LABYRINTH Great new demo with some fab effects.RGB ham plasma
PD033 DEVILS NO REALITY Another great multipart demo from Devils! +
PD034 DRAGONS MEGADEMO An old demo but still one of the classics!
PD035 ELVIRA DEMO An exellent demo of a very good game!
PD036 E P I C Incredible preview to a new game by Ocean, Filled vectors. 1M
PD37/38 ERPLAND (2) Brill kalidescope patterns on this excellent demo!
PD039 FILLET THE FISH Similar to puggs, but not quite as good. +
PD040 FRAXION "REVENGE" Cartoon style horror movie recorder ! Very funny! +
PD041 FRAXION FUTURE VISIONS Superb Aliens-hype intro plus great pictures +
PD042 GOLDFIRE OBLIQUE INFINITY Nice megademo with an acid style video!
PD043 GOLDFIRE ULTIMATE FX Another good megademo from Goldfire.
PD044 HORIZEN SLEEPING BAG Great multipart demo with vectors & funky music.
PD045 INDIANA JONES DEMO Nice clip of the movie!
PD046 IRAQ DEMO Amusing demo of Saddam meeting, President Bush ... Kaboom!
PD047 INTUITION MEGADEMO Includes a very good acid type section!
PD048 KATHARSIS MEGADEMO This is the famous Xcopy demo from Poland! +
PD049/50 KEFRENS MEGADEMO VIII Loads of filled vectors and brill music.(2)
PD051/52 KGB MEGADEMO (2) A great house music video & vector drummers.
PD53/54 LAUREL & HARDY Good demo featuring The lonesome pine song.(2) +
PD55 MAGNETIC FIELDS HYSTERESIS Exellent vector graphics, plus music !
PD56/57 MAGNETIC FIELDS SPACED OUT (2) demo disk with great music tracks
PD58/59 MAXIMUM OVERRIDE (2) Very nicely done filled vector demo by TSB.
PD060 MIRAGE MEGADEMO Another good disk, this one copies itself.
PD061/62 MONTY PYTHON (2) Brilliant demo featuring the lumberjack song !
PD63 MONTY PYTHON NUDGE NUDGE Another amusing sketch on 2 disks! (2)
PD64 NEWTEK DEMO 3 An exellent demo,take your machine to the limit! (2)
PD65 NOT THE NINE O CLOCK NEWS Some amusing sketches on these disks (2) +
PD66 PHENOMENA ECES A very good demo with a light sourced filled vector! +
PD67 PHENOMENA INTERSPACE Is time Linear ? get this demo and find out!
PD68 PHENOMENA ENIGMA Absolutely brilliant, one of the all time greats! +
PD69 PHENOMENA JOYRIDE Another absolute corker of a demo !
PD70/75 PINK FLOYD THE WALL (6) Oh yeah ! A huge demo based on film !

PU030 BAD BIRD ANIMATION Not too bad this one
PU031 BASKETBALL A basketball player shooting a ball into the net. 1 Meg +
PU032 BONGO ANIMATION Animation of a man playing the bongo drums. +
PU033 BUSY BEE Cute animation of a freaky bee. almost looks wooden. 1 Meg +
PU034 CLOTHES PEG Bouncing clothes pegs and more. Not bad. 1 Meg
PU035 COOL COUGAR A cartoon style anim, tells the story of cool Cougar.1M +
PU036 CXI SPACESHIP A cool sculpt 4D anim of a ship circling a globe +
PU037 DART ANIMATION Good animation of a dart passing through an egg!
PU038 DRAGONS LAIR TIME WARP Animation of the cartoon game .1M +
PU039 ERIC-S AMY VS WALKER Cute and sexy(?) squirrel chasing a Walker.1.5M
PU040 ERIC-S BATMAN A great animation featuring batman and the joker.1 Meg+
PU041 ERIC-S COYOTE 2 This ones a corker,coyote up to this tricks 1.5 Meg
PU042 ERIC-S COYOTE STRIKES BACK Not too good this time but popular.1mg
PU043 ERIC-S MORE AEROTOONS More humorous cartoon capers. Great stuff.1M +
PU044 ERIC-S SHUTTLECOCK Two Space Shuttles playing with a satellite. 1 Meg
PU045 ERIC-S STEALTHY II The Mig-29 and Stealthy bomber cartoon.1M +
PU046 FRANKLYN THE FLY Great anim of a day in the life of a housefly!
PU047 GHOSTBUSTER ANIMATION Anim on the popular ghostbusters theme.
PU048 GYMNAST ANIMATION Animation of a gymnast swinging on the bars.1M +
PU049 HAPPY ANIMATIONS Happy-Man, TreeFrog, Windowman and Hammer. All 512K
PU050 HIGHLANDER SWORD ANIMATION Anim of a Scotsman dancing on swords.
PU051 HOLIDAY ANIMATION Not too bad this one
PU052 LAUREL and HARDY Brazzel Atkins, select your film from the videos.1M
PU053/4 LIGHT CYCLES (2) Huge animation from the Tron film. Fab. 1mg! +
PU055 LUXO TEENAGER Father & son lamp animation converted to the amiga.1M +
PU056 MAGICIAN II this ones a bit better, more glasses this time round. 1M
PU057 MAGICIAN Similar to the juggler anim, but not quite as glossy.1M +
PU058 MINER A miner truck loading coals into a buggy to be taken away. 1M
PU059 MR POTATO HEAD Watch the potato man in cabaret!
PU060 NEWTONS CRADLE ray traced animation, plus F-19 and Rocking chair +
PU061 PHAROAH ANIMATION An animation of a Pharoah kings mask. +
PU062 PIANO ANIMATION This is an animation of a cartoon piano! +
PU063 PORKY PIG ANIMATION Cute anim of Porky pig character with sound! +
PU064 PROBE SEQUENCE Probe investigates life forms on distant planet 1M +
PU065/68 REAL 3D (4)Superb demo of effects possible with Real 3D.1mg! +
PU069 REAL THING HORSES demo of the animation package for deluxe paint. +
PU070 SHUTTLECOCK ANIMATION 2 shuttles playing with a satellite!
PU071 THE BOINGS Great anim of 2 Zebedee characters on springs!
PU072 THE JUGGLER the old classic animation that sold 1000s of Amiga's! +
PU073 THE KNIGHT DEMO Animation of a knight climbing out of a book. 1M +
PU074 THE WALKER DEMO Helicopter attacking the walker. Film style. 1M +
PU075 THE WALKER DEMO II Walker Attacking the A2000. Not bad. 1 Meg +
PU076 UGLY MUG ANIMATION The ugly mug goes for a spin! +
PU077 UNICYCLE ANIMATION Exellent animation of a unicycle & a car! +
PU078 WINGS Superb quality red baron biplane animation. Very nice.1M +
PU079 ZEUS BUST ANIMATION Animation of a golden bust rotating! +

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WILDFIRE MEGADEMO
PD SOFT, DISK 2137

A couple of years ago, a fairly young group called the Rebels put together a demo called *COMA*. This strange piece was a combination of wild dancefloor music and wacky images, the result looking like some of the acid music videos seen at the time. There have been a few similar demos since then, but none of them have been as good... until now that is.

Wildfire have been coding for a while now, but their latest megademo has to be their finest production yet. The intro is fairly tame, with some images of the team and a pretty tame soundtrack. Soon enough, things start hotting up with the *Tekk-No* demo. This is the only piece of techno-music with graphics that comes up to the high standard set by *COMA*. If this wasn't enough, the disk finishes up with the credits and a superb track which manages to work breakbeats in with atmospheric strings and a cut-up sample from 'Papa was a Rolling Stone'. Absolutely wonderful!

ASTRONOMY SLIDESHOW
PD SOFT, DISK 2114

This one should appeal to space fans and lovers of all things ambient. The disk contains a series of digitised shots of a number of interesting cosmic forms, including constellations and nebulae. If this is your specific field of interest, then you can look on the shots as reference material. So if you are an ambient fan, just load it up, turn the lights out, stick your headphones on and listen to 'The Orb's Adventures Beyond the Ultraworld'. Then just drift away...

GULF WAR CONFLICT
PD SOFT, DISK 2133

Aha! I bet you were wondering when we were going to get round to this issue's Eric Schwartz animation! This one is a paean to the recent events down Iraq way, covering such elements as Stealth fighters, smart missiles, news propaganda and surrendering enemy troops.

Although the subject matter is rather heavy (man), the cartoon is very impressive, being one of Eric's best so far. Even if you still look on the war as a taboo subject, *Gulf War Conflict* injects enough sense of humour to make it entertaining without being distasteful or maudlin. Check it out for a laugh.

AKIRA PICTURES
17 BIT, DISK 1488

If you read our Christmas issue, you will have noticed that a few members of the *Amiga Format* team rated an obscure Japanese film by the name *Akira* as one of the top movies of the year. The film was based on a series of comics that have been available for some time, and the comics form the basis of this demo.

Budding Amiga artist Robert Iveson has drawn a series of frames from the comic, including the main characters of Kaneda, Tetsuo and Akira himself. The quality of the pics varies a great deal, ranging from the excellent 'Gathered Light' pic to the rather dodgy collection of Akira logos. Still, it's based on a superb story and could well prompt people into getting hold of the film. Make sure you see the special subtitled Japanese version though!

THE THING
17 BIT, DISK 1475

After including a challenger to *COMA* as the best acid demo yet, along come Rebels, the originators of the acid demo, with a new disk containing a hip dance tune from Static. Bleeps, thuds, bangs and vocal loops are the order of the day here, culminating in a wild and frenzied dancefloor-style thrash. The visuals are pretty mundane, being the usual PD 'scrolly message' type claptrap. Still, you don't have to look at the screen to listen to the music!

500 THINGS – THE COMEBACK
17 BIT, DISK 1507


```
F1 : Satan,
F2 : Dr. Suess Blues,
F3 : How's The Stomach?
F4 : Man Machine,

All Songs ©
Nic Cusworth 1991
```

500 Things...
Readme File on Disk

This disk was originally sent in by the bloke who put the disk together himself, a talented young man by the name of Nic Cusworth. There isn't much in the way of graphics – just a couple of atmospheric black-and-white shots – but the four pieces of music are superb. The styles range from the sleazy jazz feel of 'Dr Seuss Blues' to more heavy-going electronics.

'*Man Machine*' couples *Terminator* samples with snatches of Depeche Mode and dance beats, while '*How's the Stomach*' takes pieces of *Scanners* to produce a more hard-hitting track. The crowning glory has to be 'Satan'. Not a cover of the hit dance track, but a much more doomy affair very much in the style of heavy electronic bands such as Thrill Kill Kult and Nitzer Ebb. The track has been liberally splattered with Satanic samples from horror film trailers to add that extra 'evil' touch. To be quite honest, if this music was a record I'd rush out and buy it straightaway!

BAGPIPE FRENZY
17 BIT, DISK 1483

You've heard PD techno music, you've heard PD versions of chart hits and you've even heard PD renditions of classical music, but this disk contains something you won't have seen on the PD circuit before – bagpipe music. Well, every other style has been exploited, so it had to happen sooner or later!

What we've got here is a collection of tunes played on that classic instrument, the pigskin piano – and what an awful din it makes! If you fancy yourself as a kilted musician playing in the romantic setting of a heather-covered moor, then listen to this and put yourself in your dream. No, on second thoughts it could put you off the idea for life!

TWO TOMS MUSIC
After releasing their two-disk version of The Shamen's 'Progen', Two Toms have returned with two double-disk music demos. Both need two drives to run, but you can listen to the first half of each track if you have one drive.

YELLO – RUBBERBAND MAN
17 BIT, DISK 1521
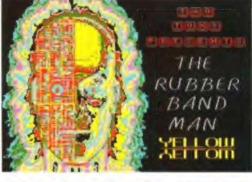
This is a version of one offbeat Swiss electronic duo, Yello, taken from the most recent releases off the album 'Baby'. 'Rubberband Man' wasn't a huge chart success, despite the album receiving critical acclaim and the fact that the single is quite a catchy little number. 'Rubberband Man' is lively and at the same time mellow track that evokes the strange mood that only Yello can accomplish (*that's enough* Melody Maker-*style reviewing - Ed*).

This version is very good indeed, being a well-recorded sample of the entire track. The picture is a wacky, colourful affair, fitting well with the Yello image, but it would have helped if the name of the band had been spelt correctly! If you're a Yello fan, then this is worth collecting as a novelty. If, on the other hand you simply like this demo, then why not have a listen to the album!

UTAH SAINTS – WHAT CAN YOU DO FOR ME?
17 BIT, DISK 1497

This is a collaboration between a DJ and a member of the European Cyberpunk band Cassandra Complex, Utah Saints managed to notch up a sizable amount of chart success this year with the single 'What Can You Do For Me?' The use of the 'Doo-da-da-da-dee' sample taken from the Eurythmics' old number one 'There Must Be an Angel' fitted well with the dance beat produced by the two crazy musicians and really captured the imagination of quite a large number of club-goers last summer.

Two Toms have given the dance hit the old PD demo treatment, and have managed, once again, to cram the entire song onto two disks. The sample quality is slightly more scratchy than their other tracks, but it still sounds pretty impressive, and the strange picture is better than the shot that accompanied the 'Progen' demo! Unfortunately, as with their other demos, you'll need two drives to listen to the whole track, so you'll either have to buy the single or a second floppy-disk drive if you want to listen to it all.

CONTACT:
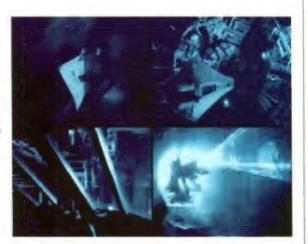
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17 BIT SOFTWARE: PO Box 97, Wakefield WF1 1XX.
0924 366982

ALIENS
17 BIT, DISK 1500

There have been quite a few slideshows based on the film Aliens, but this one has to be the most polished yet seen on the PD circuit. The intro is a very atmospheric animation based around the *Aliens* logo, which leads neatly into the well-presented slideshow itself. Each screen contains four pictures, with the plot of the film unfolding on each frame. Although the shots are only in mono, the picture quality is very good, capturing the dark and shady feel of the film. The backing music isn't that hot, but you can't have everything can you? As a piece of *Aliens* memorabilia, this is one of the better items available.

AF back issues

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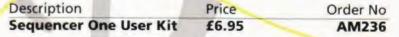
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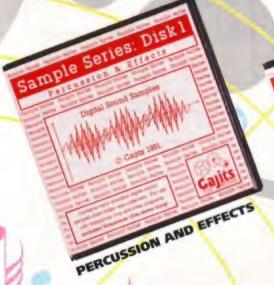
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BIGGER CHIPS

I am thinking of buying a SupraRAM 500RX. I know it can take 1Mb chips and is fully expandable to 8Mb. But is it possible to put two 1Mb chips together (piggyback them via some sort of circuit board) thus having two 1Mb chips where normally there is only one. If it's not possible, is there anyone who produces a 2Mb chip?

The QTec EX-310 drive you mentioned in Amiga Format 29 does have a Citizen mechanism. I can also tell you that it can get very noisy, especially when it searches through a disk. It was so bad that when I first bought it, I thought it was chewing my disk to bits. Mind you, I've had no real problems over the past year.

W ZARB, LONDON

First, a word of explanation – a 1Mb (mega bit) chip consists of one million individual switches. A 1Mb (mega byte) expansion would need eight such chips in order to work (eight bits = one byte).

You could indeed piggyback two chips as you describe, but all that would happen is that they would duplicate each other's function. You would still have the same amount of memory, but each chip would just replicate the other, so forget it.

No, no one yet produces a 2Mb chip – although 4Mb ones are becoming more popular (512K of memory on a single chip). To get 8Mb of RAM using a SupraRAM 500RX, you need a total of 16 4Mb chips. 16 1Mb chips give you only 2Mb of RAM.

EYE ON THE TIMES

Does the A500 Plus have a real-time clock built in? I use the clock on my 1Mb A500 (which has the clock on the memory expansion) for keeping track of when files were created on my hard drive. If I upgrade to a Plus will I lose this feature?

ROY BELL, NEW MALDEN

Yes, the A500 Plus does have a clock built in. You don't think serious Plus users could manage to live without it, do you?

LACK OF MEMORY

When I load the excellent *PGA Tour Golf* into my machine only using one disk drive and with only 512K of memory, I lack the sounds of the game. Switch on 1Mb of memory and they're all there, but the disk swapping is a pain.

When I use two floppy disk drives and 1Mb of memory, I don't have any sound! I ran two backed-up copies and the original, with no difference whatsoever – if I want sound then I have to swap the disks. Now, it might not be earth shattering but I would like a few answers:

1) Does the external disk drive make the Amiga think it's only got 512K of memory again, or does the *PGA Golf Tour* program use a particular part of memory needed to control the disk drive?
2) Can I edit the startup-sequence to free the memory needed for both the sounds and the disk drive?
3) Would the same thing happen with any old external floppy drive, or is it just my make and model (I have a Power Computing PC880B).
4) Does this happen only with *PGA Tour Golf*, or is it a common problem?

ALF DENHAM, BRISTOL

1) In a nutshell, all drives (whether floppy or hard) need some computer memory in order to operate.

Workbench

Are your bytes burning you out? Are your disk drives in a dither? Well **Pat-tastic McDonald** is alert and aloof with all the answers.

External floppy drives use up from between 20 and 30K, although more can be given over to them to make them work faster. Note that the actual portion of memory used varies, because the Amiga can allocate most parts of memory to different tasks.
2) No.
3) Yes, it would happen with all makes of floppy drive.
4) No, it does happen with other programs, although it's not necessarily the sound that's affected. It used to be the case that all games worked on a 512K machine, because that's all that was available. Nowadays most Amigas have 1Mb of memory. So programmers have a choice: make the game 1Mb only and do impressive things, or make it 512K friendly and a bit limited.

More often than not it's a compromise. *PGA Tour Golf* was not mastered on the Amiga, which complicated matters slightly. It seemed fair that, if memory was limited, the sounds would not play. That small amount of memory (30K) is a large chunk to a programmer, so they used it for the game.

Some games just do this. The easy answer is to get some more memory. These days, it's very, very rare for large memory expansions to cause incompatibility – and usually they add elements to the game. It's even better if you buy enough memory (say 2Mb or so) because then you can copy Workbench-friendly games like *PGA* to the RAM disk, and play it through that. This speeds up loading times enormously.

INTRICATE INTERNALS

1) How do I find out what revision my A500 is?
2) What do I have to do to get 1Mb of chip RAM with my A500. I also have an Ashcom 0.5Mb four chip RAM expansion.
3) Will my power supply be able to handle the RAM expansion, an Action Replay Cartridge and another floppy drive?
4) I'm thinking of upgrading to Kickstart 2.04, is it worth getting the Enhanced Chip Set (new Denise and Agnus)?
5) I'm also hoping to get a SupraRAM 500RX with 2Mb. Would it need its own power supply, and if so what type and where could I get it?
6) What's the best virus killer available?

MATTHEW DODD, ESSEX

1) Open it up and look.
2) Have a glance at the following pages.
3) Probably. Assuming that you haven't got an external floppy drive at the minute (they do use a lot of power for their motors).
4) Not yet. Games will never be released that use ECS (only four colours in a game? Forget it!) and there is little software that uses it at the present time. The sort of software that will use the ECS will be on the lines of video and publishing related programs, these need the higher resolutions of graphics that ECS offers.
5) Maybe yes, maybe no (A500 power supplies differ greatly in their ability to supply power). Any five vault power supply would do – the tricky bit is connecting it to the SupraRAM, because they usually need to have a connector fitted to them. A simple task for a TV repair shop, if you explain what you need.
6) The best all around virus killer is *Master Virus Killer V2.2*. It costs £5, and is only available from Amiganuts United. However, it cannot be run in automatic mode, checking disks as they are inserted – a PD program like *ZeroVirus 3* or *V-Check* on this month's Coverdisk would be more suitable for that.

BEST QUALITY SAMPLES

I use my Amiga mainly for music, along with a couple of other people. I specialise in samples, and currently use either *MasterSound* or *Perfect Sound* for the job. I need the highest quality possible samples, which is why I'm writing:-

I understand that a sampler is an analogue-to-digital convertor, converting the analogue sound information into digital information that the Amiga can understand. Now, I'm thinking of buying a CD player with direct digital output...

Would it be possible to wire this output directly to the Amiga, bypassing the digital-to-analogue and back to digital conversion process? Which pins would receive the digital information?

ALASTAIR JW MCLELLAN, EDINBURGH

No, it's not possible on the lines that you describe. You could (theoretically) wire CD input to the Amiga, but it would be total gibberish from the computer's point of view. You are assuming that all digital data is stored the same way – it isn't. Amiga sound samples are stored in a particular fashion, so you would have to convert the CD data into Amiga sample data somewhere down the line. This would be slower than the CD is playing, so you would lose data.

A more attractive possibility lies in the forthcoming A690 CD ROM drive. You plug this into the side of an A500, to use CDTV titles and to play music CDs. Now, in theory, you could write a program on the Amiga which spins a CD to a particular track, and reads the data off the CD and into the Amiga. The computer could then convert that information into an Amiga sound sample. However, it has to happen yet.

SQUIRREL NUTS

Recently the word 'cache' has been included in plenty of general Amiga adverts. To me, a cache is where a squirrel keeps his nuts. What does the word mean (especially when applied to a hard disk) and how does it effect normal computer operation? And why didn't my Coverdisk 29 work – it didn't have an IF command on it? But it worked a treat when I'd put one on.

STUART A WAINWRIGHT

Think of it as a car park, where information is parked until it's picked up. Hard disks read and write information very quickly, and for a computer to keep up with a hard disk, it must concentrate on the task. Amigas are usually doing lots of different things simultaneously.

By using a cache, the hard disk works at the top speed of the computer without losing information or waiting around for it to do something. A cache gives it a chance to start doing it's job, and let the computer work at its own pace.

There you have it: a cache does not necessarily make a hard drive work faster (it usually does) but it does make the whole process more efficient, with less time spent waiting for the computer to keep up. Caches are separate memory areas built into hard disks, and cannot be utilised by the Amiga as ordinary memory.

CDTV FUTURE

Recently I purchased a CDTV for £600. I can't fault the machine in any way, but I am a little bit worried about the support for it, both now and in the future. Speaking to my friends at school, it seems that a lot of software houses are backing out of developing CD ROM titles. Even if that's not true, you have to admit that very little new titles are

appearing. Also, I heard a whisper that the price will be slashed considerably and the original discontinued, with a new version being released soon. I don't want to be left with a £600 CD player. Can you tell me the real situation?

DANIEL LEWIS, LONDON

It is certainly true that a lot of titles on the CDTV either took months to appear or haven't appeared yet at all. It's also true few new titles are being announced. The reasons are twofold. First, it takes far longer to design a CDTV title than it does to write an equivalent for a computer game. You can store an awful lot more information on a CD than you can on a simple floppy disk (about 500 times as much or more). So obviously it takes much longer to arrange all the information, but more importantly debugging (finding the mistakes and correcting them) is very time consuming. It's not enough to simply whiz through a CD and make sure it works once – painstaking playtesting and thorough evaluation are needed.

The other point is that CDTV development is fairly restricted. There aren't enough machines out there for serious development to be seen as worthwhile. The CDTV will really take off when Amiga owners have access to CDTV titles through the A690 CD ROM drive. Because there are literally millions of Amiga owners around the world, the market will explode overnight and then developers will be less cautious.

Finally, once A690s get into general circulation, it's probable that CD awareness will grow. It makes you wonder just what a PD demo writer could do with a CD development system, given the chance.

ARCHIVING ARTIST

I have an A500 with 1Mb of memory. I also have a large record collection with over 1,000 titles. I'd like to catalogue the collection on my computer, but I haven't a clue where to start. Could you recommend some programs that would let me do this? I need to be able to sort through it by titles and artists, mainly.

CHRIS IVESON, WATFORD

What you need is called a database in computer terms: a program for storing collections of information, and searching through them for an occurrence of a particular field (like the name of an artist or album). Two good PD ones come to mind: *BuddBase*, which is a

little slow but does cope with large databases. *BuddBase* costs £3.50 from Deja Vu (0942 495261). The other is *AmiBase II*, which is a little simpler and is reviewed in the PD Update section of this magazine.

ANCIENT BUGS

I would like to know the correct method of backing up *Eye of the Beholder*. I've tried using Workbench (I click on the *EOTB* disk icon, then select Duplicate). This appears to work fine, but when I try to actually run the game from the set of backups, it refuses to accept the second disk on the loading screen.

Can you help? I would have thought such a simple task would be easy, but all I have is problem after problem. Oh yes, and can you only have one saved game at a time on *EOTB*?

A WETHERILL, HULL

There are two possibilities. Either the game has some hidden 'finger prints' which the Workbench copying procedures ignore. This would mean that the game would start and then stop, as you describe. The other is you're using Workbench 1.3.2, which is dodgy for copying disks using the Duplicate option. If you try using the Shell to copy disks you might find it works.

Failing that, you will need a special copier. There are many Public Domain copiers (*PDCopy*) which are better than Workbench and should be sufficient for what you want. The best copiers require an external disk drive. You plug a hardware widget between the computer and disk drive, then run a copying program supplied. This produces excellent copies and beats most software protection procedures. I'd recommend the Datels' Synchro Express III (or Ashcom's Mac II. Datel (0782 744324), Ashcom (0530 414433).

PROBLEMS OF LATE

Apologies to all those of you who couldn't copy the Sequencer 1/Xmas *Lemmings* from the Christmas issue. If you use a PD copying program as per the Ancient Bugs letter, that should sort you out. The reason, by the way, is that Gajits wanted to be able to track the copies of *Sequencer 1* – so don't give any copies away to your friends.

Also, the *OctoMed* disk from AF29 didn't load on the A500 Plus. However it can be run by loading Workbench first, but if you want a disk that starts up, all you have to do is:

1) Load Workbench.
2) Select 'Execute Command' from the top-of-screen menus. All you have to do is hold down the right mouse button, move the pointer to the top left of the screen and down over the Disk menu. Let go when 'Execute Command' is highlighted.
3) Type this in and hit Return.

```
ed OctoMed:s/startup-sequence
```

4) The computer will now ask for the *OctoMed* disk. Take out the Workbench disk and put in the Coverdisk (if you have two drives then you can just stick *OctoMed* in the other drive).
5) You will eventually (you might need a couple of disk swaps) get to a screen displaying the start-up-sequence file on the *OctoMed* disk. Use the cursor keys (keys on the keyboard with arrows on them) to move to the words 'vec' and 'new'.
6) Either put a semi-colon in front of them, or delete them entirely.
7) To finish, hit the Esc key, then X and then Return. After a couple of disk swaps you should already be back at the Workbench.
8) Remove any disks, reset the computer, and put in the *OctoMed* disk. It should now work.

COMPARING WORKBENCH 2 with 1.3 should give you an idea what it's all about. This was a relatively quick turnaround to fix the worst faults of Workbench 1.2. Specifically, the printer drivers were tweaked to give better results with more up-market printers. Workbench 1.3 could start straight from a hard disk, with no floppies needed. It introduced the Fast Filing System, to make hard drives work more efficiently. And so on.

It was good for its time, but the main problem with 1.3 was that, like all its predecessors, Workbench could not show files which lacked an icon. Such files would not show up on Workbench at all. So you had to use either the CLI or Shell programs to access the files and directories which form the backbone of Workbench, these are files like the startup-sequence file, the printer driver files, and the keymap files: which are crucial to everyday activities of Workbench, but you had to be a keyboard wizard to get at them.

For instance, in order to do something as simple as copying a file from one disk to another, you couldn't just click on the icon and drag it to the icon of the disk you wanted it to be copied onto. Instead, you had to open up the Shell or CLI, and type in which disk the

Workbench 2

Read all about the one upgrade that makes the Amiga easier to use, as **Pat McDonald** explains how to get Workbench 2 on an old Amiga.
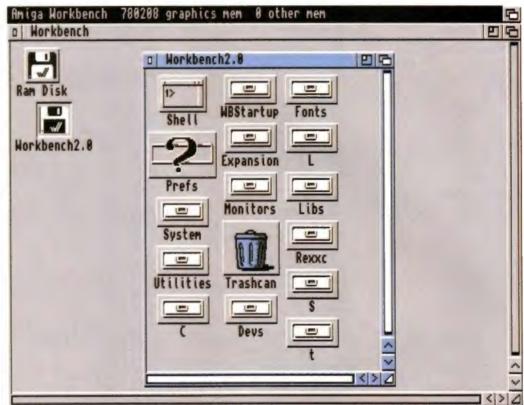
Another very useful option is to have the contents of a disk or directory shown as a list of names. This means that your windows can be very small (icons on the Amiga tend to be large). Also lots of useful information is displayed, like when a file was created and how big it is. You can sort the list by either of these two features.

file was on, whether it was in a directory or not, and the name of the target disk and maybe the target directory. The biggest failing though, of Workbench 1.3 was that you had to be good with a keyboard and have a fair working knowledge of the system in order to set it up properly.

The one outstanding advantage of Workbench 2 is that everything on a disk can be made visible and manipulated with the mouse. Whether you're copying by clicking and dragging with a mouse, or running a program by double clicking on it: Workbench 2 gives

On the Windows menu is one of the most exciting developments of Workbench 2. Even if a file doesn't have a proper icon, it can be displayed with a 'pseudo icon'. Now you can explore disks using just the mouse, rather than having to use the keyboard. Shown here are all the files of Workbench 2.

you a view of what's really on a disk, rather than the illusionary 'it hasn't got an icon so it doesn't exist' approach of 1.3. Every single file can have an icon, without an actual icon file being present on the disk.

This is great, because you suddenly don't have to use the keyboard to explore the Amiga anymore. That option is still there (and you can now run CLI keyboard commands from the Workbench screen, rather than having to find a handy Shell icon). But the amount of technical expertise needed to use an Amiga as a computer rather than as a games machine has been greatly reduced.

Apart from that more open approach, Workbench 2 is more visible in other ways. The style of Workbench has changed greatly from the old familiar blue, orange,

white and black. Now it's various pastel colours, and they now have a specified order.

This means that a sort of 3D look and feel has been added, with options appearing to be closer to you and general workspaces being further away. All it really is a is a cheap optical illusion, but it does mean that important gadgets (places to click a mouse button on) are more obvious.

There's even more on the visibility front though. Workbench 2 can fully utilise the Enhanced Chip Set (ECS). ECS consists of both an ECS Fatter or Super Agnus chip and an ECS Super Denise. If you have both then you get access to the ECS.

All the ECS does is to add three new graphics modes to the Amiga. These are; SuperHires, which has 1280 pixels (graphics dots) horizontally and 256 or 512 lines vertically, depending on interlace; Productivity, which has 640 pixels horizontally by either 512 or 1024 lines vertically; and A2024, which is serious resolution at close to 1000 x 1000, but is limited to just four shades of black-and-white.

This may sound great, but on a fairly standard TV set these graphics modes are pretty much useless – the lettering is just much too small to read. You need a good quality monitor to use ECS, preferably a multisync type (necessary for flickerless Productivity and A2024 modes).

ECS is a very important development on the Amiga scene, this is because it gives a much better graphic

AREXX FOR ALL

Just what do you get with a Commodore upgrade kit? Well included is a new 2.04 Kickstart ROM chip, three disks (Workbench, Extras and Fonts) and a full set of manuals. If you haven't heard, these manuals are good, much better than any that have gone before.

There is one thing missing: AmigaBasic is no longer sold with the Amiga as standard. Quite honestly, it's not much of a loss. AmigaBasic was universally disliked for being slow, buggy and Amiga unfriendly. There are better Basic languages available separately.

What is included is ARexx. If you've never heard of it before, chances are it won't set your heart on fire. ARexx is an interprocess systems manager for the Amiga, able to swap data and control programs all on its own.

Although of little interest to the average users, ARexx is really wonderful if you are using a lot of programs that can talk to ARexx (those that have an 'ARexx Port'). Such a system can be configured so that the programs run autonomously on long repetitive tasks, leaving you more time to yourself rather than slaving over a keyboard.

CHIP MEMORY

One term that may be puzzling some people is 'chip memory'. The Amiga's memory is split into two types: fast memory, which can only be used by the processor chip and chip memory, which can be used by the processor and the custom sound and graphics chips. These latter types are sometimes called the PAD, standing for Paula, Agnus and Denise.

Chip RAM is where all the active graphics screens are stored, and any sound samples or graphics data has to go there too. How much chip RAM you have affects the serious creative capabilities of your machine (although fast RAM is more useful than chip RAM – do not upgrade one without the other). How much you can have depends on what version of the Agnus chip is fitted to your machine...

Neither the 8367 or 8370 Agnus chips can use more than 512K of chip RAM – they're obsolete. The 8371 Agnus can give you 1Mb of chip RAM, but does not have the Enhanced Chip Set. The 8372A has both, and is the ideal chip for updating either the A500 or A1500/A2000. The good news is that the 8372A is already fitted to the majority of these machines.

To get 1Mb of chip RAM on an A500, a small modification has to be made to the circuit board (described overleaf). If you want to upgrade to the full 2Mb chip RAM capability of an A500 Plus, you need a different Agnus again (the 8375). This cannot be put straight into an A500 or A1500/A2000 because these machines were not designed to use 2Mb of chip RAM.

If you do want the 2MB chip RAM capacity of the Plus, you will need to fit a circuit board on the inside of your machine. Such boards have the Agnus and the 2Mb of memory on them, and they cost in the region of £200. I will be reviewing such a board from Aquarian PD (0703 685006) next month.

THE DISADVANTAGES

Workbench 2 does sound a bit too good to be true, doesn't it? Well, I'm afraid there are some problems. Quite a sizeable proportion of software just does not work with Workbench 2 or ECS. This isn't the direct fault of the new system and it's not a situation that will last very long, as manufacturers struggle to update their hardware and software.

The problem is really down to programmers who are not using the Amiga computer properly. Given the complexity of the machine, it's not really surprising that some people program to a standard, and so long as it works with a certain section of Amigas they tend to figure that's good enough.

Now that Workbench 2 and the ECS are available to all, new software should always be compatible (although new Workbench 2 software will in some cases be incompatible with older versions of Workbench, due to the new features). Older software that isn't compatible will fall by the wayside.

You can expect to find plenty of software that just doesn't work on a Workbench 2 machine. My advice is try before you buy, and if you really need some old software you might consider getting a Kickstart ROM switcher (mentioned on Page 212) that will let you use either Workbench 2 or 1.3.
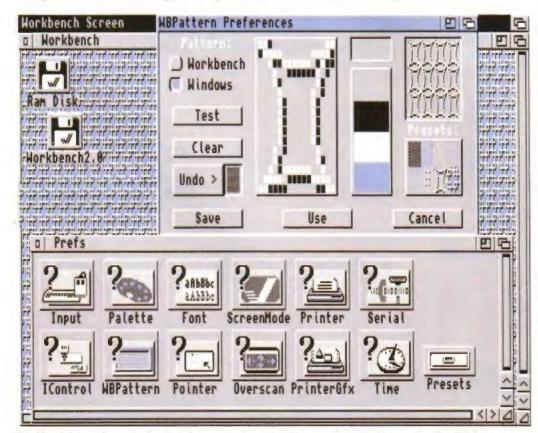
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resolution that it had before – the Amiga can now compete on even terms with more expensive computers. However not much software that is currently available was designed with ECS in mind (although some of it makes use of it). It's not as important now as it will be when programs are released that can use it properly.

The reason for this is simple. Workbench 2 has the ability to either use standard Amiga fonts or proportional Compugraphic/Agfa fonts. The latter variety are very good news for the desktop publishing community. A proportional font is one that can be shrunk or expanded to virtually any degree. Try that with a normal font and you end up with big letters with jagged edges or tiny unreadable dots. But (as far as I know) no software has been released that uses proportional Workbench 2 fonts.

Remember that Fast Filing System? It's always been possible to use this with floppies – the problem is

that with Workbench 1.3, a floppy with the FFS on it actually works slower than the old system. Happily, Workbench 2 still gives you the choice: but FFS floppies really are faster this time around.

The list goes on. Workbench 2 is compatible with Amigas that have more than 512K of chip memory (Workbench 1.3 needed the Setpatch command to be run first); Workbench 2 has better 32-bit address handling, which means that it's more accelerator friendly (works better with faster processors – 'decision making' chips) than 1.3; Workbench 2 multitasks better and does not guru.

By guru I mean crash: stop working due to a mistake in a program. Workbench 2 still notices illegal programming and complains, but you can now shut down the offending program and carry on. A much better system than just saying that an error occurred somewhere in the memory.

Workbench 2 is far more superior in every respect to Workbench 1.3. The launch of the A500 Plus has heralded a brand new era. Now that other Amiga owners can catch up with the new standard, the Amiga has become a much more potent computer and is ready to face the rest of the Nineties. The machine behaves much more sensibly, and is now easier to pick up for novice users (even more so for experienced users). Miss Workbench 2 at your peril.

Workbench 2 is much prettier than 1.3: the screen and associated icons can have 16 colours rather than just four on a high-resolution screen (but that takes up more chip memory). You can overlay a patterned background over the blank parts of the screen, which is also aesthetically pleasing.

When you want to start with a blank directory, rather than copying and renaming the Empty drawer as per earlier versions, you can just select this option from the menus. Renaming the drawer follows straight on. Other more user-friendly features are: telling you how disk swaps it will take to copy a disk; Snapshot will set either the positions of a window, or positions of icons within a window, or both; and lots more else besides.

OBSOLETE

There are two versions of the Amiga that simply cannot take Workbench 2. They are the original A1000, and the early A2000 revision A. The circuit boards on these machines cannot be modified to take the new set of chip required. Having said that, by fitting a complete new circuit board, the new system can be used. But it's an expensive option.

THE FIRST THING to understand about upgrading an old Amiga to a more up-to-date standard is that you don't have to do it all at the same time. No doubt many people will (just to get the bother over and done with) go straight from 0.5MB of chip RAM, Workbench 1.3 and no ECS to Workbench 2.04 with ECS and 1MB of chip RAM, but you don't have to.

It is possible to run Workbench 2.04, with no ECS or more than 0.5Mb of chip memory by fitting a new ROM chip. You can have 1Mb of chip memory by fitting an 8372A Fatter Agnus chip and modifying the motherboard, but no ECS (because there's no Super Denise in your system) or Workbench 2.04. Or you could just have ECS with a Super Denise and Fatter Agnus without modifying the board for more chip memory – although there's not a lot of point because Workbench 1.3 doesn't support ECS.

So, there are four basic steps to upgrading the machine: changing the ROM chip for Workbench 2.04; changing the Denise chip (for ECS); fitting a Fatter Agnus (again for ECS – but this is only neccessary if you haven't got one already); and modifying the board to get 1Mb of chip memory.

COMMON PROBLEMS

Which way around do chips go? Rectangular chips like the ROM and Denise have a notch at one end. The easiest way to check the notch is before you start removing chips. If you are faced with an empty socket and are not sure about the orientation of the chip, look at the socket that the chip plugs into. It will have a notch on one end too.

The Agnus chip is different. On the board near the Agnus chip there is a '1' printed on the board. All Agnus chips have a dent, circle or dot on one edge – this edge goes nearest to the '1' on the board.

An all too common sight is a pin out of line. It's impossible to insert a chip in this condition – don't even try it.

How to rectify it without pliers! Find a flat surface, and gradually bend the pin back into position. Actually a pair of pliers massively simplifies the operation, but steady, firm pressure is the basic requirement.

Down to business

Right, your Amiga is getting on a bit and the warranty has expired. So the best thing to do is to upgrade some of your Amiga's internals. Read on for a blow-by-blow tutorial courtesy of **Pat McDonald.**

GENERAL THEORY

The first thing you have to do with your old A500 is unscrew the case. A fairly simple job, because it's held together with three screws at the front and back. The tricky bit is that some A500s have hexagonal (TorX) screws, but the majority of them have the more familiar Philips screws.

Once the screws are apart, it's time to take off the top cover. This is a fairly tight fit, so don't be afraid to give it a good tug. You should be down to the shield, an inner metal case which provides a shield from radio signals, confusing your computer or vice versa.

Yes, an Amiga with it's case off. There's still a metal shield left to get through at this stage.

A gentle tug on the ribbon cable going from the keyboard to the computer's circuit board will let you take the keyboard off. Note the colours on the wires – it appears that the purple wire is always on the right-hand side, but your system may well be the exception to the rule.

Removing the shield is pretty easy to do– just undo the four screws that are holding it down and use a pair of pliers to ease up the metal tabs which keep the upper part of the shield attached to the lower half. Once the tabs are bent straight, then simply pull the upper shield off.

You should now have something resembling the above photograph in front of you. Don't be too alarmed if there are slight differences – there are four revisions of the A500; rev 3, 5, 6 and 7. All of them can be updated, but the difficulty and expense grows with the age of the machine – and as I can't get hold of a revision 3, I cannot guarantee that these methods work, so I'll be ignoring it this issue. The revision is printed on the board at the left-hand side, near the words 'B52 Rock Lobster'.

UPDATING KICKSTART

This is the easiest update you can do on your Amiga, so long as it's a fairly recent revision 6 or 7 A500 or any B2000/A1500. It's really just a case of whipping out the old chip and putting in the new one.

All you have to do is simply prise out the old ROM chip with a flat-bladed screwdriver. Chips are not very tall – just slip the screwdriver into the gap at the end, between the chip and the socket below it.

Gently apply pressure until the end starts to rise, then apply pressure to the other end. Eventually the chip will pop out. Put the new chip into the socket. Check and recheck the pins are lined up with the holes, and apply pressure to the top of the chip to ease it into place.

For the technically minded, I can tell you the changes needed to use a new ROM with an older revision 5 or 3 A500. The ROM socket needs two minor changes: pin 1 must be connected to the A18 signal, and pin 31 must be connected to the +5V signal.

I'm deliberately not giving a procedure for this, as it's fairly complicated and you're really better off getting a professional to do it. Another reason is that I haven't actually tried it yet (all the other modifications listed have indeed been tried out). Remember, this problem only happens with revision 3 or 5 A500s. I will be investigating the problem further and printing the necessary procedures ina future issue.

The Kickstart 2.04 ROM chip is necessary in order to use Workbench 2. Luckily it's also the easiest chip to physically get at – you can get your screwdriver low enough to apply plenty of leverage.

UPDATING DENISE

The Super Denise 8373 chip (necessary for ECS) is in theory even more simple to fit than the ROM chip, because it works with just about every Amiga. Only a couple of physical obstructions make it a bit more of an effort.

For one thing, getting at the end of the chip closest to the edge of the board means that you run into the bottom section of the metal shield. The best way for you to get around this is to bend the shield slightly, to give a better purchase under the chip.

Apart from that, the method is similar to changing the ROM chip. Just lever out the old one and put in the new – and do remember to check the notch to make sure the chip is the right way around!

The shield has to be twisted slightly to physically get a grip on the Denise chip, but it bends back to shape without any fuss.
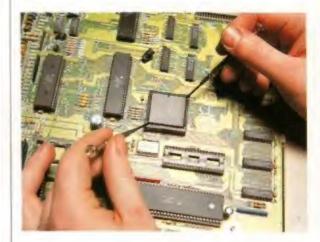
UPDATING AGNUS

Commodore switched to ECS equipped 8372A Agnus chips some months ago. Have you got an ECS Agnus already? The Sysinfo utility on this month's Coverdisk will tell you which version of the Agnus chip you have fitted to your machine.

It's just as well, because Agnus is one of the most fiddly chips to replace. Strictly speaking, you should use a special tool to get it out, called a PLC extractor. Failing that, a pair of tweezers with the tips hooked over make a good substitute. The last resort is to use a pair of small jewellers' screwdriver.

At two corners of the chip's socket are indentations. You have to lever the screwdriver in at these, and pop the chip out (it's spring loaded). Take it easy when inserting the screwdriver. The socket can take a certain amount of twisting and bending, but be very careful so as not to permanently damage it.

Now this is the fun part. Take the new Agnus chip, and hold it so that the orientation notch (it might be a circle or a dent) is towards you. If you have a PAL European system, you must insulate one of the connectors on the chip (pin 41 to be precise). If you don't you won't to do any damage to the machine – but it will always start up in NTSC North American mode, which is more trouble than it's worth on this side of the Atlantic.

Which is pin 41? The one with the notch towards you and the writing on the chip facing the ceiling, count in nine pins on the far right side of the chip. The eighth pin you count will be pin 41 – you have to put a sliver of sellotape over this, and neaten it with a sharp knife so that the other pins can make the connection.

After that little chore, match the notch on the chip with the '1 printed next to the Agnus chip socket, and push it in. It's amazing how easy it is to put in, compared with taking it out.

The agony of the Agnus chip lies in the few minutes spent twiddling screwdrivers underneath, to lever it out from both ends at the same time. Damage to the socket is a distinct possibility if you rush.

1MB CHIP RAM

The most important part of modifying your computer in this area is realising that it doesn't in itself add more memory to the machine. An A500 with only 0.5Mb of RAM isn't transformed into a 1Mb machine by soldering a few tracks.

You therefore must have at least 1Mb of memory. This can either be on the motherboard itself (in the case of revision 6A or 7 A500s) or a completely normal memory expansion underneath the trap-door slot. It doesn't really matter which route you take, although having all the memory on the board is aesthetically pleasing.

There are two operations in getting 1Mb of chip RAM. The first is to locate JP2 – it's near the ROM socket on all A500s, the exact location does vary. JP2 always consists of three solder pads, two of which are joined by a trace. You have to cut this trace, and solder the other two pads together.

When I say 'cut', I don't mean you have to dig dirty great holes in the circuit board. A simple slice or two with a Stanley knife will suffice. All you're trying to do is prevent an electrical signal from running across the trace.

Revision 6A boards are considerably less cramped than revision 5s, so it's even easier to cut the right track and make a bridge

Once that little chore is out of the way, you have to find JP7A. Now this is marked only on revision 6A machines – revision 5 owners are going to have to concentrate on the photograph.

Whatever you call it, the thing you have to do with JP7A is to cut it so that again no signals can pass through the trace.

On revision 5 boards, JP2 is further away from the front of the board, but it's still fairly accessible.

Revision 5 machines need the indicated track cut - on revision 6A machines this is clearly marked as JP7A

CHIP MEM OPTIONS

As it has been stated many times before, the sort of RAM expansion that you have in your Amiga can make a significant difference to upgrading. If it's a large capacity (greater than 0.5MB) trap-door expansion (fits on the underneath and connects to the Gary chip) then, in general, modifying your computer to have 1Mb of chip memory will leave you with 1Mb of chip memory and little else.

SORT OF COMPATIBLE

As stated in Amiga Format 29, I said that trap-door memory expansions were not compatible between the A500 Plus and the A500. Well, some of them are – specifically the 0.5Mb sized ones commonly found in 1Mb A500s. It is also interesting to note that 1Mb A500 memory expansions are not compatible, nor are large capacity A500 memory boards.

ROM SWITCHING

It is possible to fit a Kickstart sharer board in your Amiga, and flick between the different versions of Workbench while the computer is turned off. It may seem a little silly, in view of everthing being made to work with the Plus. On the other hand, if you have some programs that you need and they don't work with Workbench 2, it could be right up your alley

CONTACTS:

Workbench 2.04 Kickstart upgrade kits:
£79.99, Commodore 0628 770088
Super Denise 8373 chips:
£39, Ace Repairs, 0503 220282
Fatter Agnus 8372A chips:
Approx £60. Ace Repairs, 0503 220282; Ashcom, 0530 414433; Memory Expansion Systems, 0530 414433; and many other places.
Kickstart Sharer boards:
£24.99, FCC Distribution, 0532 311932

Getting to grips with Workbench

Incredibly useful though it may be, that Workbench screen can look pretty complex and daunting at first. Never fear! It's really all very simple, once you know what it's there for. Especially for new Amiga owners who want to do more than play games, **Damien Noonan** explains what Workbench and the CLI do - and how you can do it too...

WITH YOUR AMIGA, when you first open the box, you get several disks, and the most important of these is the Workbench disk. Of course, you can go quite happily through your Amiga-owning life without ever needing to understand the Workbench disk. If you just play games, you might never have touched the Workbench disk at all. Or you might have booted it up to have a bit of a play, but never really understood what it does.
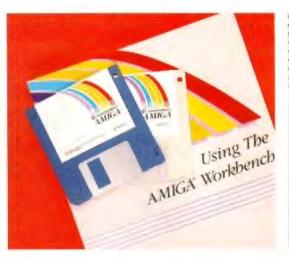
But if you want to use your Amiga for more than just games, or you want to understand a bit more about how the Amiga works, it's the Workbench disk that's the key. So if you've got a job to do and you don't know how to do it, or if you're just curious, this series aims to tell you why the Workbench disk is there, what it does, and how to make the most of it.

Most of this series is aimed to be practical, showing you exactly how to do things using Workbench. But this first part is mostly theoretical: it explains what Workbench is and how it works. The idea is that if you understand what's happening when you do something with the Workbench, it makes it much easier to understand what you're doing and remember how it's done. Trust us, it works! We've kept it as simple as possible, almost too simple, but if you get a little bit lost just take a break, then start again. There's nothing here too complex for a six-year-old to understand. Honest!

The Workbench has three basic functions. First of all, it's an 'interface', which means it provides you with a way of controlling the computer. In actual fact Workbench gives you two different interfaces, as described in the 'Learner' panel on this page.

Secondly, it also provides a common interface for all serious programs. This goes by the name of 'Intuition', and basically just means that all programs you run from the Workbench have similar menus, work in similar windows and have the same basic look and feel. This makes it easier for you to use a new program. Intuition also lets you run several programs at the same time, each in its own window: so it makes the Amiga's multi-tasking possible.

Thirdly, and the real meat and drink of this series, is what Workbench allows you to do when you're not running a program from it. We've just said that Workbench provides an interface, which loosely means a way of controlling the computer: but if you want to be more exact about it, an interface is a connection to something. Workbench connects you to the disk operating system (DOS), which is the heart of any computer.

The Amiga's disk operating system is called, pretty obviously, AmigaDOS. You'll often see books or articles that explain what Workbench allows you to do and they will put the whole thing under the heading of AmigaDOS rather than Workbench. But it doesn't really matter what you call it: we'll stick to Workbench, because the three Workbench interfaces (the Workbench screen, the CLI or Shell, and Intuition) are all meant to let you use AmigaDOS without really needing to know what it is.

This series is intended to show you, as practically as possible, how to use Workbench or the CLI do things that you want to do. With the new Workbench 2, now quite common in new Amiga 500s, we were unsure which version of Workbench we should aim this at. So we've decided the best way to do this is to decide first what job it is that we want to do and then show you how it can be done by using Workbench 1.3, or using the CLI, or with Workbench 2.

But first of all, it's a good idea to get an understanding of what a disk operating system is there for. The basic principles are very simple and, as you might expect from a computer, very logical. They also apply to any computer you care to name.

So the IBM PC has a CLI interface which lets you control its own disk operating system: the PC can also be fitted with Windows, which is a Workbench-like GUI interface: and the Apple Macintosh also has a very easy-to-use GUI interface. But all of these interfaces do exactly the same thing: they give you, the user, access to the disk operating system to let you do certain basic jobs.

So exactly what is a disk operating system? Well, basically it means that you can control precisely what's on a disk. That's all there is to it. What makes it even simpler still is that there are only two things you can have on a disk. Firstly there are programs, also called 'applications', and secondly there are files, which basically means anything you've produced using a program: pictures from

Deluxe Paint, letters from a word processor, tunes from a music program, whatever.

Making it even easier, common sense tells you that there are only four things you can do with a file. You can create a new one, using a program; then, once it's on a disk, there are only three things you can do with it. You can make a copy of it, so you have two identical files; you can move it from the disk it's on to another disk; or you can delete it, so that it no longer exists. That's all there is to it.

Programs that run from Workbench are more or less the same, except that most of us aren't too likely to be creating any. But you can move them, copy them, or delete them. There's also one extra thing you can do with a program, of course, and that's run it.

So, let's recap. Logically, there are three things you can do with a file once you've created it and put it on a disk: move it, duplicate it or delete it. Workbench lets you do all these things quite easily. But the disk operating system actually looks at these basic jobs in a slightly different way, and it's well worth understanding how it sees them.

The disk operating system is looking more closely at what's happening *to the disk* when you're using the computer. The four basic disk operations are **Read, Write, Delete** and **Execute.** It may sound a little techie and complex, but it's easy – when you know how a computer works! getting a bit ambitious, you think? Naah, it's easy enough!

How a computer works: the incredibly simple description! Let's assume that you're using *Deluxe Paint* to create a picture. You can think of the computer as having four basic parts.

The first part is RAM. This is the memory inside the computer where all the data for both the program and the picture is held. The second part is the screen output. This is where the picture is displayed. The third part is the mouse input. The Amiga has to interpret the way you move the mouse as changes to the data in RAM (the picture, that is) and then display the changes on the screen. And the fourth part is the disk. When you've finished, you save your picture to the disk under the control of the disk operating system.

If we stick with *Deluxe Paint* for the moment, with everything we've just learned we can now describe exactly how the disk operating system works. Most of you will be at least vaguely familiar with *Deluxe Paint* and you'll know that, like most programs, it has a File menu which contains all the disk operations. Let's see how the menu options relate to the disk operations.

First of all, we've seen that there's one thing you can do with a program that you can't do with a file, and that's run it. You double-click on the *Deluxe Paint* icon to load the program. In the way the disk operating system looks at things, you've just Executed the program. Remember, you can't Execute files.

Now we're on to what you can do with the files on the disk. In *Deluxe Paint*, of course, files are pictures. Remember, we've got four things we can do with files: create, duplicate, move and delete them.

To create a file on the disk, we'd use the **Save** menu option in Deluxe Paint. For the disk, this is a **Write.** You've written the data from the computer's memory onto the disk.

To remove the file from the disk, you'd use the **Delete** menu option in *Deluxe Paint.* This is called exactly the same by the disk operating system: it's a **Delete** operation.

To make a **copy** of a file using *Deluxe Paint* is a two-stage operation; and it's the same for the disk operating system. First you'd have to load the picture into *Deluxe Paint* using the Load menu option. For the disk, this is a **Read:** you're reading the data in from the disk into the computer's memory. Then you'd go to the Save As... menu and save the picture under a different name. This would now **Write** the picture from memory to the disk. And there you are: you've duplicated the picture.

To move a picture using *Deluxe Paint*, you do exactly the same thing as to make a copy; except that when you save it again, you save it onto a new disk. Again, as far as the disk operating system is concerned this is a two-stage operation: you **Read** the picture from the first disk, then **Write** it to the second disk. And that is basically all you need to know!

It may seem that we've gone into all this with a rather tedious attention to detail, but it's useful to understand it exactly. Let's sum up.

The disk operating system lets you do four things to files: create them, delete them, duplicate them and move them. But it looks at these in terms of its own three functions: read, write and delete. Creating a file is just writing it; deleting a file is just deleting it. But to duplicate a file you have to read it, change the name, and write the copy back to the disk; and to move a file you have to read it, switch the disk, then write the copy to the new disk.
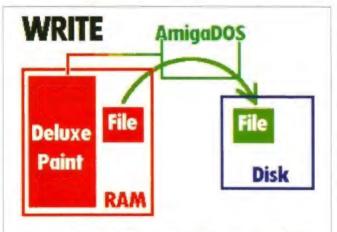
The more astute amongst you will have noticed that there's a complication to both duplicating and moving a file. When you duplicate a file and leave it on the same disk as the original, it has to have a different name. If it didn't, it would be just written over the original and you'd still only have one. When you move a file from one disk to another, it effectively just makes a copy on the new disk, leaving the original behind. If you want to get rid of the original, you then have to delete it.

Both of these side-effects are caused by the fact that the disk operating system can only work in terms of Read, Write and Delete. It doesn't actually think in terms of duplicating and moving: those are human ideas. And these quirks are true of any computer system, not just the Amiga.
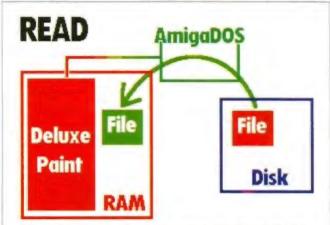
Next month we'll show you how to actually do these things using Workbench, but for now there's one more concept it's good to get a grip of. And that's the other thing besides programs and files that lives on disks...

Apart from files and programs, you can also have **directories.** Directories are simply subdivisions of a disk into which you can place files or programs: they're there to help you organise things more clearly. You'll also often hear directories referred to as **drawers,** and the icons for them look like drawers on the Workbench screen.

That's because to help people get their heads round the idea, the people who invented Workbench compared a disk to a filing cabinet. Inside the filing cabinet you can have a number of drawers, and inside each drawer

AmigaDOS is the Amiga's disk operating system, and is the bit that controls everything you do to the information on a disk. There are three things you can do with a file on a disk: the first is to create one. Here, a *Deluxe Paint* file is created on the disk. Under *Deluxe Paint*'s control, AmigaDOS performs this: it's called a 'write' operation.
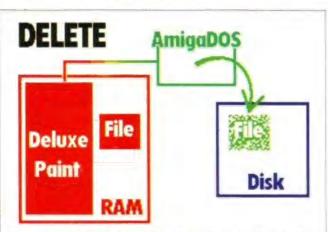
The second thing you can do to a file is read it from the disk back into the computer. Here, AmigaDOS is performing a read. Note the way that both the program and the file are held in RAM, the computer's main working area. If you now modify the picture in *Deluxe Paint*, it stays the same on disk until you write the new version back.
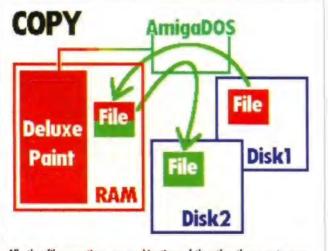
you can store your files. The only difference is that you don't *have* to have drawers on a disk: you can just treat it like one big box and lob your files straight in.

The idea of drawers or directories is to make it easier to organise the information on a disk. If, for instance, you had a disk with the program *Deluxe Paint* on and you also kept pictures on it, you could create a drawer called Pictures to keep them all together in. If you had two favourite subjects for your pictures: say, for example, birds and fish, you could have one drawer called BirdPics and another called FishPics, and save your new pictures into either one as appropriate.

The interesting thing is that the disk operat-

DELETE

The third and simplest disk operation is Delete. This only affects the file on the disk and doesn't involve RAM. In actual fact, the deleted file is still there after a delete: it's just no longer listed in the 'directory block' on the disk that says what's stored where. This makes Deletes quick and means you can recover deleted files with an appropriate program.

COPY

All other file operations are combinations of the other three: so to copy a file to a new disk, you can read it from the first disk and then write it from RAM to a second disk. To move a file, you would read it from the original disk and write it to the new one, but you'd then also need to delete the file from the original disk. Simple, eh?

ing system treats different drawers or directories the same way it treats different disks. This means that in just the same way as you can have two files with exactly the same name, so long as they are on different disks, you can also have two files with the same name *on the same disk*, so long as they are in different directories on the disk.

So if you duplicate a file within a directory, you have to give the copy a new name. But you can copy a file from one directory to another without giving it a new name.

This leads us to the last basic concept we want to explain for this month, and it's a very important one to grasp. It's what's called a 'path'. When you're dealing with a file on a disk, you have to explain to the disk operating system exactly where it is. That's all a path is: it's a route by which the Amiga has to go to find the file you want. Let's explain.

As far as the disk operating system is concerned, the disk itself is a directory. It's referred to as the 'root directory', the word root (as in root of a tree) meaning just the starting place, or main directory. There are two ways that you can refer to the root directory of a disk: either by the name of the disk itself, or by the name of the disk drive that it's in.

The following explanation might tend to be a little confusing, because we haven't yet done any typing of commands into the CLI, but it also applies to the Save requester of programs like *Deluxe Paint*, so you should get the idea. If not, don't worry: you'll see it in action next month and use it yourself.

So, say for example that you have a disk in the Amiga's internal disk drive and you want to load a picture from it into *Deluxe Paint*. The disk's called Paintdisk and the picture is called Phoenix. As you know, you can choose the picture just by clicking on the name in the Load requester of *Deluxe Paint* (the 'requester' is the box that comes up when you select the Load menu option). But you can also choose the right picture by typing the name into the slot on the requester box.

What you have to do is type in the right 'path', followed by the name of your picture. In this case, naming the path simply involves naming the right disk. But here's our first rule of paths. The name of a disk must always be followed by a colon (:). Now, the internal disk drive is always called df0: (that's a zero, not an 'o') by the Amiga's disk operating system. So we could choose our picture by typing in the following.

df0:Phoenix

Or alternatively, by using the real name of the disk instead, like this...

Paintdisk:Phoenix

Either way, the program will find the picture called Phoenix, which is in the 'root directory' of the disk, in other words, it's not in another drawer on the disk.

Now suppose that the same picture was in a drawer or directory called Pictures on the disk. We'd have to describe a different path so that the program could find it. The second rule of paths is that the directory name must be followed by a backslash (/) so we would have to type the following to find the right file.

df0:Pictures/Phoenix

Equally, within our Pictures directory we might have two other directories for keeping different kinds of pictures: say for example that they're Birdpics and Fishpics. In that case, we have to explain that too.

df0:Pictures/Birdpics/Phoenix

Remember, in every example we've used here, you should make sure not to leave any spaces. If you do, the computer will think you mean something else. And that's really all there is to paths, though they are very, very important when you start doing things using Workbench.

Next month, we'll get on with it properly. We'll explain how to use Workbench to format disks and do all the basic disk operations we've outlined. And then we'll move on to more advanced things you can do with Workbench, as well as having a little fun!

See you next time! 🔵

WHAT WE'VE LEARNT THIS MONTH, IN BRIEF...

Right, here's a recap. Workbench and the CLI are different ways of accessing the Amiga's disk operating system, AmigaDOS. At its most basic, this lets you organise what's stored on a disk. On disks, or within 'drawers' (also called 'directories') on a disk, you can store programs or files: the difference between them is that you can run or 'Execute' programs. There are four basic operations that you can use to organise data on a disk - creating, deleting, duplicating and moving things - but the computer uses the three basic operations 'Read', 'Write' and 'Delete' to do these. And it's important to be able to tell the computer where something is by telling it the right 'path' to reach it.
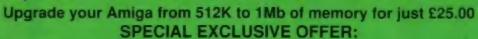
GOT ANY QUESTIONS?

We've tried to keep it simple so far, but if you do have any questions, please write in and we'll do our best to answer them in the Workbench pages of the magazine. The address for Workbench can be found either on the Workbench pages or on the Letters pages of the magazine. Don't be shy: if you want to know something, the best way is to ask!

AF BY MAIL

You can actually make life a lot easier for us and make certain of getting a reply if you make darned sure you're addressing your letter to the right person or place, so here's a guide of what to send where. We can never give personal replies by mail, so don't send us a stamped-addressed envelope: and we can under no circumstances give personal replies by fax.

WORKBENCH

If you have any problems with the technical side of your Amiga, with hardware or with serious software, write to Pat and he'll try to answer you. Alternatively, if you have any advice for others or any handy tips to share, send it in and you could win a prize.
PAT MCDONALD, WORKBENCH,
AMIGA FORMAT, 30 MONMOUTH STREET, BA1 2BW

GAMEBUSTERS

If you've just found the cheat mode, mapped out the levels or found all the passwords for the latest game – whatever the game cheat, send it in to Maff and you could win a prize. Also, if you're stuck somewhere, ask the Helping Hand section in Gamebusters for advice – or if you've read of a problem in Helping Hand that someone else has and you can solve it, then send in the answer to win a prize!
MAFF EVANS, GAMEBUSTERS (OR GAMEBUSTERS HELPING HAND), AMIGA FORMAT, 30 MONMOUTH STREET, BA1 2BW

LETTERS

The Letters pages are for you to air your views and share your opinions: please remember not to ask questions that should be in Workbench! What Damien is looking for are thought-provoking or entertaining letters, if they're short there's a better chance they'll get in. Prizes for the best two. LETTERS, AMIGA FORMAT, 30 MONMOUTH STREET, BA1 2BW

COMPETITIONS

To enter a competition, write the answers and your name, address and phone number on the back of a postcard or a stuck-down envelope and send it in. don't put several entries in one envelope together, or include entries with letters to any other part of the mag.
COMPETITION, AMIGA FORMAT,
29 MONMOUTH STREET, BATH BA1 2AP

AD PROBLEMS

If you have a problem with companies advertising in Amiga Format – you're cheque's been cashed but you've had nothing or whatever – our advertising department should be able to help. Write telling them briefly about the problem and which company it concerns.
AMIGA FORMAT ADVERTISING COMPLAINTS DEPT, FUTURE PUBLISHING, 30 MONMOUTH STREET, BATH BA1 2BW

MAIL ORDER

If you've ordered anything from the Amiga Format Mail Order section and you've got a problem, please remember that we on the magazine don't deal with it at all. Write to them at our Somerton address or phone 0458 74011.
AMIGA FORMAT MAIL ORDER,
THE OLD BARN, SOMERTON, SOMERSET TA11 7PY

SUBSCRIPTIONS

Similarly, if you move house and want to make sure your copy of the mag catches up with you, then send the new address to
AMIGA FORMAT SUBSCRIPTIONS, THE OLD BARN,
SOMERTON, SOMERSET TA11 7PY

FAULTY COVERDISKS

The disks are duplicated and stuck on the magazine by a firm who we employ for that specific purpose. If you have a faulty disk, send it to them enclosing an SAE. We don't keep stocks of disks, so we can't help.
DISKCOPY LABS, UNIT A, WESTMARCH, LONDON ROAD, DAVENTRY, NORTHANTS, NN11 4SA

The Amiga Format editorial team can only take enquiries from readers between 10.30am and 6.30pm on Tuesdays.
    The Advertising department can help you with problems you may have with companies who advertise in the magazine if you call during normal office hours.
    Our subscriptions service and the Amiga Format mail order department are not in the same building and should be contacted on 0458 74023.

Got an opinion on the new A500 Plus?
Or is anything else getting your goat up?
Well then do the write thing: **Letters,
Amiga Format, Bath BA1 2BW.**

Let

ABSOLUTE BEGINNER

When I bought my Amiga this year I was ignorant about computers, and still am. What I've learned is through reading *Amiga Format* and the manuals I got with the machine. But when I say 'learned', that means the terminology, without necessarily understanding.

If I run into difficulties I tend to go to the computer shop. Thank goodness I bought it locally, as I find them very helpful. On one of your issues I tried to back up the disk but couldn't. The shop did it for me, but they said there was probably too much info on the disk. Can that be the case?

Because I don't know anything about computers, I could be told a load of old rubbish and I would believe it. This is one area where I think *Amiga Format* falls down. You assume that we know something about computers. In *Amiga Format* 28 I started to work my way through the CLI tutorial, but I got stuck. What does it mean when you get 'Guru' at the top of the screen? We take the disk out, re-set and load again and it works fine. I hope this is not a virus.

Mrs Carole Thomson, Peterhead

I'm very pleased to see that like a lot of people want to learn more about their Amiga. Yes, we know some people find even the simplest bits computing confusing. We were all the same once. At this time of year, when there's a lot of new owners, we try to cater for you.

Our new beginners' series starts this month and, as well as explaining how to use Workbench and the CLI, it's intended to give you an insight into how the computer works and what's going on in the background. So rather than just telling you how to do things, we hope you'll develop an understanding of why you have to do things a certain way.

Incidentally, we abandoned the tutorial we started in Issue 28, partly because Workbench 2 on the Amiga 500 suddenly appeared and partly because quite a few people, like yourself, got stuck on it. The new series should be easier to follow and hopefully more useful.

The Guru message means the machine's crashed: it's got its data twisted up inside and managed to get confused. It's called a Guru Meditation because the hippies who designed the Amiga used to meditate when it happened, to keep their stress levels down!

WRONG NUMBER...

This is a complaint! In *Amiga Format* 27, Pat McDonald printed a letter from me in the Amiga Advice column. This was fine until I got to the bottom and it said 'Stefan Allerhano'. I'm well annoyed. I got the piss ripped out of me at school and I demand an apology. (Actually I'm not all that bothered, just thought I'd write to keep the cretins at school happy).

Stefan Allerhand (with a 'd'), Reading

Sorry, Stefan. Remember, readers, write your name clearly on any letters you send for publication. And a big 'Hi!' to all the cretins at school...

MOVING MUSIC

I am doing GCSE Music and I am composing on my Amiga A500. Unfortunately, we don't have an Amiga at school, so I have to take my own in to certain lessons. Do you know of anyone makes a carrying case for the Amiga 500?

Jamie K Stubbs, Bishop Auckland

No, I'm afraid I've not heard of one. Anyone else know if you can get one?

BAD LUCK, GOOD LUCK

Having spent weeks contemplating the virtues of buying a computer, I've been reading your excellent sister journal *Amiga Shopper* for the last two issues. December proved interesting because of a news item on the introduction of the new 500 Plus, clearly a great step forward for an already excellent machine.

My mouth began watering for a taste of info-tech and, flexible friend in hand, I sprinted for the car. That afternoon, boxes unpacked, I got stuck in to becoming the world's leading authority on a new form of birth control... computer addiction. Nights passed, I lost weight, all track of time, sleep and hair. The theme to *Lemmings* ran over and over in my mind.

Two-and-a-half weeks later I returned to the world in which real 3D people live, the novelty certainly not wearing off, but wanting some further fixes of the drug. The free *Amiga Format* magazine in my Cartoon Classics pack had whetted my appetite, so I visited WH Smiths and there, on the shelf, was the December issue, complete with two Coverdisks. Oh, what heady expectation of delights! More reading, learning and playing, not to mention the £10 worth of *OctaMED*!

Now almost four quid is a lot of cash to someone who's just shelled out over six hundred. I had to think long and hard but eventually shelled out the cash. Absolutely great, it was just as good, better in fact, than I had anticipated. I rushed to the back bedroom and booted up *OctaMED*. NOTHING! There, in small print on the label, was the reason. It won't work on the 500 Plus. Are you able to do anything to alleviate my disappointment? And will future Coverdisks work?

Barry Gallimore, Mansfield

The release of the 500 Plus caught the industry, including ourselves, by surprise. It was already arranged that we would put OctaMED on that disk, which we thought was a good deal for £3.95. When the Plus appeared on the market we bought one to test for the lead feature and found OctaMED wouldn't work.

Now, not many Pluses had been sold by then, but we're not cynical exploitationists, so we put a warning that it wouldn't work on a Plus, thinking that would give Plus owners the chance to decide whether to pay an extra £1 for a blank disk or not. BUT we soon discovered that you can use OctaMED on a Plus if you make two little changes to it, as described in the News pages of the January Christmas Special issue.

If you missed that article, or you've had problems making it work, please write in to Workbench and we'll print the details again. So, anyway you can use OctaMED after all!

Now everybody's had a couple of months to catch up with Commodore's surprise move, we can all make sure that any Coverdisk from now on will work fine with the A500 Plus.

ters

DEUTSCHE MEINUNGEN

I'm a German user and I happened to spot your mag during a visit to Britain. Since you won't receive too many foreign opinions, I'm determined to contribute my share to extending the range of arguments.

Basically your mag is a refreshing change from the German mags covering the Amiga that I used to read. I find your approach towards technical matters very beginner-friendly, if a bit shallow at times. What I don't like is the lack of A2000-specific information. I understand the majority of readers use an A500, but there are people out there with a need for more professional advice, and that includes the A3000 as well!

I'm also inclined to think that you don't take the Amiga too seriously, as you devote the majority of pages to games. People who use their computer mainly for games can read *Amiga Power*, while those with a more serious approach to their machine should be able to satisfy their needs within *Amiga Format*. I admit that even these people will play games at times, but the overall games/serious stuff ratio is a bit over the top!

As for ratios, the same applies to adverts. I've never seen a magazine with so may adverts in (and I've seen a lot). Compared to the average number of editorial pages, I get the impression the readers are paying for a catalogue rather than a magazine.

Nevertheless, *Amiga Format* provides an interesting aspect to the Amiga, and (especially with the Coverdisk) so far, I haven't regretted subscribing. I also like your humorous style, which is another reason for my decision to read your magazine.

PS It's been good to see Maff again - I missed him when he left *Zzap!* Towers...

Alex Schwassman, Ratingen

Some interesting points. While Screenplay is the biggest part of the magazine, all the games stuff added up, including Gamebusters, is only a third of the magazine. All software reviews apply to bigger Amigas as well as the A500, Workbench is just as happy to cater for A2000 queries as anything else: it's only hardware reviews that have tended to concentrate on the A500, and we'll take a look at larger expansion stuff soon.

HARD GRIND

I'd like to take up where you left off with regard to games being hard disk installable. Your final comment was "the majority of users buying games won't have a hard disk". What rubbish! There must be thousands of users out there with hard drives.

Considering the amount of advertising and reviews of HDs, I'd think they are becoming a favourite upgrade for most users. I play games only occasionally, the main reason being the frustration caused by slow access times, lots of disk swapping, and so on.

Most PC games are hard disk installable: it's almost like they treat IBM users as serious people who can be treated like adults, whereas we Amiga users are little kids who think of no more than pirating the latest games to give to everybody they know.

Now it can't be difficult to add to the top of the review whether a game is hard disk installable, so please add this in. It may be a small point, but it stops

me wasting my money. As for the software houses, when will they start treating us like serious users with some sort of option to install a game onto HD? You never know, you might sell more copies.

Tim Lloyd, Hong Kong

I agree with you, and the jury is currently out on the topic of whether we should include a symbol or something on the review of every game that it is hard disk installable. We'll find out more about how many people have hard drives in our enormous reader survey next issue, so don't forget to get involved in that and make sure your vote registers.

MONSTER EDITOR

At last the truth is out! 'Damien Noonan' is in fact an alien barbarian, as pictured in the World of Commodore Show issue of *Amiga Format*! No wonder that *Amiga Format* is so good! The Show was great and I hope you can repeat it next year.

Clifford Allen, Thatcham

Yes, it's true. We're all aliens. We don't get paid, but we are fed a constant supply of alcohol, which we are re-processing to provide fuel for our spaceship. Honest! And yes, next year's show will be even better...

CHEAT PROBLEM

I have recently bought a copy of your *Screenplay 2* book which, like its predecessor, is a damn good read in its own right. However, I have a problem: some of the cheat codes don't seem to work!

I have seen the same cheat codes for *Rainbow Islands* in many different magazines, but when I type

them into the intro screen they never have any effect. I wonder if my games are any different to yours: for example, I bought *Rainbow Islands* as part of the Addicted to Fun compilation.

KF Lee, London

It's very often the case that when a game is re-released as a budget version, the original cheat is too well known and is changed or taken out altogether. A famous example is Elite, in which the massive cheat system was taken out for the recent budget version. But the codes for Rainbow Islands *that give you the extra powers are an integral part of the game – you earn them by collecting the diamonds – so they can't have been taken out for the Addicted to Fun collection, they must just have been changed. Anyone who knows them should write in to Gamebusters straightaway!*

JUST A GREMLIN?

You've heard of backtracking on records: now subliminal messages have found their way on to the Amiga! You may have played *Lotus Turbo Challenge 2* without realising that you were being subjected to a subliminal message. Shame on Gremlin! If you want to hear it I suggest you remove the left sound channel cable, pump up the volume, and listen very carefully, and you should hear "Do not copy this game" in a menacing voice. Is this going to lead to a whole host of subliminal messages appearing on the Amiga?

Alan Neil, Whitby

Actually, I believe it's illegal to put subliminal messages in things. But if you can hear it, by definition it's not subliminal. Any comment, Grems?

ADVERTISERS INDEX

Random Sample

Merry War Christmas is over now it's back to work...

Winning with Philips
Yep, here's the bit that you turn to first (?), just to have your dreams crushed underfoot. The jammy winner of the Philips midi hi-fi is B Johns of Millom in Cumbria. The almost-as-lucky runners up, who each get a smashing personal CD player are: Mr RL Fotheringham, Mr Greg Duddle and Mr Chris Stanley.

Digita deliver
One of Evesham Micro's Reference 40 hard drives is winging its way to J Madden of Swinton.

Psycho killer
The winner of the "It was Greg what did it" compo is: Mark Johnson who correctly deduced that Greg was indeed the culprit, kindly adding that society was to blame for pushing our Mr Ingham to this dreadful deed.

Who said that?
Mrs PC Spensley, although getting the answer wrong to Quote of the Month 29, wins a T-shirt. The fact of the matter is that we aren't quite sure who said it either (Damien made it up on the spur of the moment), although we think someone might have said it in *Tango and Cash*.

If you have any idea of the origins of this month's quote (it's on the Contents pages near the Future logo) and you fancy winning a fabulous *Amiga Format* T-shirt then write to us telling us who said it, where, when, why etc.

Soundtracks

THE SINATRA CHRISTMAS ALBUM - YULETIDE CLASSICS FROM THE GRAND MASTER HIMSELF

NIRVANA - NEVERMIND

Pic of the Month 29
The winner of Spot the shot 29 was Mr R Fawlden of Gibraltar who correctly spotted the green spotty bit as a table tennis bat from James Pond 2 — Robocod

Pic of the Month 31
If you recognise which game this piece of screenshot is from write to Spot the Shot 31, at the normal address and you too could have a scrummy *AF* T-shirt, as warn by all the coolest chicks at Cannes this year.

EXCLUSIVE! LATEST TV-CD ANNOUNCEMENTS REVEALED! COMMODORE IN FOUR-LETTER-WORD HORROR SHOCK PROBE!

Last month we reported that the CDTV was to be fitted with DCTV: now *Amiga Format* can exclusively reveal that Commodore have a whole range of other confusing anagrams lined up for imminent release.

CDTV (believed to mean Commodore Dynamic Total Vision) is actually an Amiga hiding inside a video recorder, but on weekends it pretends to be the world's first consumer multimedia player. As such it doesn't really matter what the letters stand for, so long as Joe Public believes it's a kind of TV that works from a CD.

DCTV (understood to stand for Digital Composite Television) is also a small black box. It's a form of True Colour enhancer and will be installed in the CDTV, allowing it to display pictures containing thousands of colours.

CDTV, DCTV and even CDTV with DCTV you may have heard of, but did you know about these...

DTCV – DeskTop Curriculum Vitae – allows you to smarten up those job applications with professionally-presented career histories. Incorporates a highly-sophisticated structured design program with a word processor. The spell checker only knows four words: 'education', 'previous', 'employment' and 'how-much-money do I get?'. Includes highly imaginative stand-alone 'creative career construction kit' for professional-standard lying.

VCDTs - Victoria Cross, Delirium Tremens - is a new kind of game, a cross between a flight sim and a domestic role-player. You play the part of Bunny Harris, a one-time ace pilot who was accorded the highest honour for valour after fashioning a pair of tin legs for his navigator out of old baked bean cans while under heavy fire. But Bunny lost his nerve in a dogfight over Calais and now drinks to excess. Can you cure him?

VTCD - Video Tape Compact Disc - is a utility for transferring your videos to compact disc. It's a combination of a hardware interface, controlling software that runs on the CDTV and a multi-million-dollar CD pressing plant in Switzerland. We believe the retail price might be a little beyond the pockets of the average CDTV owner.

CDVT - Compact Disc Video Tape - on the other hand, is a lot cheaper. It retails for only £3.99, for which you get a phono lead to connect the audio outputs of your CDTV player to your video recorder, and an instruction book that says: "Buy a video recorder that has a long-play hi-fi sound recording facility". Very easy to use.

TCVD - Top Cat's Venereal Disease - is an educational program in which the lovable comic character with the voice of Sergeant Bilko introduces youngsters to the topic of sexual diseases. Colourful digitised graphics... *(Right! Stop there! That's enough stupid CDTV anagrams! - Ed)*

Why not make darn sure you get your Amiga Format?

There's no greater disappointment than making the trek into town to visit the newsagents, eagerly clutching your £3 for the next issue of Amiga Format, only to discover that the magazine has completely sold out. But it does happen. The world's biggest-selling Amiga magazine can disappear from the shelves of your local Smiths or Menzies quicker than you would believe, however hard we try to make sure it doesn't.

And in some areas of the country, in some small newsagents, you may have extreme difficulty finding the magazine on sale at all. What a nightmare scenario! So what can you do about it?

Well, the intelligent course of action would be to fill in the small coupon on the left and deliver it to your local newsagent. Then you can pick up your copy of the magazine as soon as it goes on sale, in the comfortable knowledge that it's sitting there waiting for you.

Smarter still would be to see Page 184 now, to find out how a subscription can make your life easier and get you a free piece of software into the bargain!